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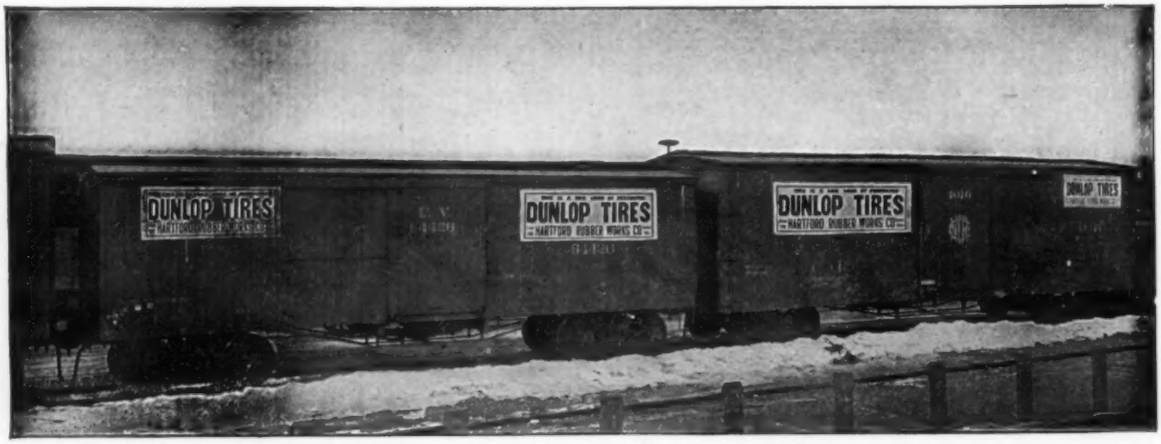

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THE AUTOMOBILE

VOL. XII. NEW YORK—SATURDAY, MARCH 25, 1905—CHICAGO NO. 12

BOSTON'S GREAT SHOW WEEK ENDED.

Special Correspondence.

BOSTON, March 20.—The Boston automobile shows are now history, and to-day the machines, whose admirers last week numbered hundreds of thousands, are being packed and started on their way to all parts of the country. Some of the exhibits are being shipped as a whole, direct to the shows which will open in Washington on March 27, and in San Francisco next month. Others are going to Hartford, while still others are destined for their respective factories. Cars from many of the exhibits are being sent to persons who purchased them during show week. Though weary with their exertions of show week, the managers of the shows and the exhibitors, are satisfied with the results, and are in a happy frame of mind, hustling to get the shows cleaned up, and to get down to the real work of following up their new business.

It is admitted that the Boston Automobile Dealers' Association has covered itself with glory, and that it produced a show the equal, in many respects, of any held in the world, and far ahead of the shows of this country in the matters of attractiveness, cleanliness, attendance and convenience. Congratulations have been showered upon Manager Chester I. Campbell, and the members of the show committee, George H. Lowe, J. H. MacAlman and E. A. Gilmore, who produced a show which fully occupied the largest exhibition building in New England, with 187 complete cars on view, and an attendance of more than 200,000 persons. Moreover, they proved that Boston is one of the very best automobile markets in the country, and they opened the eyes of everybody to what can be accomplished by a local show properly handled.

DEMONSTRATION CARS LINED UP OUTSIDE MECHANICS HALL, ON HUNTINGTON AVENUE, DURING THE BOSTON SHOW.

As for the Importers' Salon, the collection of foreign machines, and a few of domestic make, together with some of the famous racing machines, was worthy of a larger attendance than it received. Sales were made at the importers' show, but it is now thought unlikely that there will be

separate exhibitions next year; imported and domestic machines are likely to be housed under one roof, which will mean that the power boats will have to be shown in a separate building.

Considered at large as a local show, in the beginning few men of national prominence were present, but reports of the size of the exhibition and of the interest that it had created were spread far and wide, after the opening, and before the end of the week there were to be met in the exhibits and aisles many men whose names are known not only in this country, but also abroad as leaders in the industry. Two days after the doors of the building were opened it was admitted that Boston had the handsomest show of the year; it was complete in every detail. All the well-known makes of cars were there, and a number of new ones, embodying radical departures in engineering. The gasoline line was unexcelled and the number of steam carriages that was shown seemed to demonstrate that this branch of the industry is far from being on the wane.

Of the 187 complete cars shown in all in Mechanics Building, 160 were gasoline, 18 steam and 9 electric. There were five gasoline commercial vehicles. Of the gasoline cars there were 57 four-cylinder touring cars, and 18 four-cylinder chassis; 34 two-cylinder touring cars and 6 chassis, and 22 limousine four-cylinder cars and two two-cylinder limousines. Of the gasoline runabouts 15 had one-cylinder motors, 7 two-cylinder motors, 3 three-cylinder motors and 3 four-cylinder engines. There were on exhibition 6 three-cylinder cars and 2 with six cylinders. One of the six cylinder cars had a vertical motor and the other a horizontal. In the electric section three cars had limousine bodies, one of the touring-car type, and five were runabouts. The steam division showed nine touring cars, one limousine and eight runabouts.

The attendance started out with a rush on the opening night, 47,000 persons passing the ticket takers. The average attendance after that was 25,000 a day. This enormous attendance made it impossible for the management to figure out the receipts from day to day and so it cannot be told how large a percentage of the attendance was paid.

During the whole show there was not a discordant note, and only a semblance of one on the closing day when it was said that the National Association of Automobile Manufacturers would next year take charge of the Boston show, and make it a national affair. At this rumor the local dealers were up in arms at once, and if the national organization tries to interfere, it may have a contest of no mean proportions on its hands. The dealers have always run the Boston shows with no assistance from outside, and when they have brought the show to such prominence and made it so profitable, they will not submit to being swallowed by any outsiders.

That a possible move by the national body to take over the Boston show was anticipated, was shown by the careful manner in which the local dealers' association intrenched itself before the show opened. Every possible avenue of approach by an outside hostile force was barricaded, and though this was done for local purposes, the dealers had in mind possible national aggression. The dealers' association is incorporated and includes representatives of practically all of the well-known makes of machines. But in addition to this the lease for Mechanics Building is held in such a way that no other party could obtain it for an automobile show. It is also so held that the National Association could not compel the dealers to give it up. More than this, the agents of licensed cars have taken protective measures, so that, all in all, the Boston field is well protected.

Speculation as to next year's show was rife before that of this year had been under way three days. The general opinion seems to be that there will be an even greater show in another year. Nearly all of the foreign makers have placed, or are about to place, agencies in this city, and in this way the big foreign makes will be brought into the fold. Many new makes of machines are constantly coming upon the local market, and it is likely that all of Mechanics Building in another year will be devoted to automobiles.

The power boat builders will not allow themselves to be divorced from their relatives of the road without a contest, for the interest in road vehicles was reflected directly in the auto boat division, and the success of the boat show was unprecedented. Boats were on view costing from $100 to $10,000, and found ready buyers. Builders exhibited who have considered their reputations so well founded as to need no further exploitation, but they one and all agree in the value of such a show as that held this year. To get them all together for show and other purposes a movement has been started to organize a New England association of power boat manufacturers. During the show a meeting was held at which the project was discussed and this week a committee, appointed at last week's meeting, is to make its report on the advisability of the formation of such an association. The project seems to be favored by the more important builders, and if it goes through there may be a separate exhibition of boats next year. This might be held at the same time as the automobile show, further up the avenue in Symphony or Horticultural halls, or in both.

The small amount of attention that was given the social end of the Boston show was remarked by visitors from other cities where the social side has been made prominent. Only one entertainment was given by the management, and that was not heavily attended. Although the managers and exhibitors were not reluctant to entertain, they found little encouragement to do so. The business of the show was so heavy, and the exhibitors were kept so constantly on their feet attending to the wants of customers, that they had no time to attend social affairs, and when the show closed at night they were ready to go to their homes and rest. So far as accommodations outside of the show were concerned, visitors found that the exhibiting hall was surrounded by good hotels within easy walking distance, while the Massachusetts Automobile Club and the Bay State Automobile Association quarters were near at hand; many visiting automobilists were entertained at both.

From the very opening until the close of the show, the sky was clear and the temperature remarkably warm for March. The fine weather naturally increased the attendance, and it made work for those in charge of the demonstration end of the show. In expectation of a great demand for demonstrations, local agents had put all the cars available on the street and often there were 150 machines lined up along Huntington avenue in front of Mechanics Building. Some agents had a half dozen machines in the service, yet were unable to attend to the wants of all possible customers. The chauffeurs were kept busy from 10 o'clock in the morning until 6 at night, and as most of them took about the same route through the boulevards, there was much rivalry among them. But even though there were plenty of brushes, there was little trouble with the police, and there were few arrests.

The bill introduced in the Massachusetts Legislature to have numbers placed on motor boats the same as on automobiles has been gone one better by Representative Davis, of Plymouth, who has introduced a bill to compel the muffling of the motors all along the Massachusetts coast. The good people of Plymouth declare the boats buzz like a swarm of angry bees and disturb their peaceful slumbers. They cite that all persons have a right to be protected against "noise which constitutes an annoyance to a person of ordinary sensibility to sound, such as materially to interfere with the ordinary comfort of life and impair the reasonable enjoyment of his habitation."—*New York World.*

Practically speaking, there is no extended market for automobiles in China, writes U. S. Consul Anderson from Hangchau to Washington. In the average Chinese city it would be impossible to use a machine, and there is no prospect of any improvement in the near future of a character to promise any trade. In Shanghai a good many automobiles are in use, and their popularity is increasing. It may almost be said that an automobile boom is on in that city. There are many people there who can afford automobiles and who are accustomed to spend money in such ways, but the demand will be limited to Shanghai City, and machines suitable for city work rather than country touring are the ones needed. Automobile manufacturers in the United States should have representatives among the business men of Shanghai. American makes will be received upon their merits.

Steam Cars at the Boston Show.

Representative Exhibit by the Leading Makers in America the Chief Attraction.—Descriptions and Photographs of Types Displayed.

BY H. F. DONALDSON.

Boston, March 16.—Considering the Dealers' Show in Mechanics Hall comparatively with the shows that have preceded it, the most interesting feature, perhaps, is the collection of steam cars scattered about the halls at various booths. Most of them are of familiar models or are enlarged editions of familiar types, although in one instance at least there is a decided novelty; yet the collection of types and styles is larger and presents more variety of design and construction than anything of the sort that has been on public view since the earlier days when steam was in the majority. When one considers the minority position which steam has taken in pleasure vehicle construction, the showing is something of a surprise, and close inspection seems to prove that steam is by no means a neglected form of energy, in New England at least.

There are six exhibitors of steam cars in the building, and a seventh represented by a sign only, which shows, however, that there is another candidate for public patronage to be counted upon.

It is very doubtful if in any other six exhibits in the building, including all known and some unfamiliar types of gasoline cars, there is as great a wealth of inventive skill displayed or such a fertility of device for accomplishing a common purpose. The steam cars range from the lightest runabout of the familiar carriage type up to the full size side-entrance touring car, which needs a more than passing glance to distinguish it from the most modern motor-in-front gasoline car.

Wide as is the difference between the extremes of body construction, it is not as great as between the power equipment of the cars. In steam generators there is a choice ranging from the fire tube cylindrical boiler, pure and simple, to the rectangular flash type, with intermediate constructions in which water tubes and fire tubes are combined in one generator. And in engines the vertical compound and the vertical simple claim attention with the inclined compound and the horizontal with slide valves and with poppet valves. So it is, too, with transmission systems which include the propeller shaft and bevel-gear drive, the center chain and the side chain and one special type in which the drive is direct from a pinion on the crankshaft to a spur gear differential. Prices also step up from a few hundred dollars to several thousand dollars, and with these various demands on the attention of the novice a choice of car or construction is beset with many perplexities.

Most ambitious of all the exhibits, and from an American standpoint one that presents many novel points of interest, is the full-sized touring car shown by Edward S. Clark, of Dorchester, Mass. From the works of this manufacturer many steam cars have gone out in the past, especially in the days when steam was the popular system, but this car is a radical departure from previous constructions. As will be seen by an inspection of the photograph on page 408 of the car, taken at the show, it closely resembles the usual motor-in-front gasoline vehicle. There is a long bonnet and a deep radiator in front of the dash, the usual steering pillar, and control levers of the Panhard type at the side. The bonnet does not cover the motor, however, but a flash generator said by the builder to be composed of round tube coils, rectangular in form. As it is the subject of patent applications at the present time, it is not exposed to public view, and structural details are not now available.

The engine, which exteriorly bears a striking resemblance to a Serpollet motor, lies transversely under the footboard, and has four opposed cylinders. The heads of the cylinders on the right-hand side can be seen in the photograph immediately back of the front bracket which supports the side running board. The valves are of the poppet type and lie on the tops of the cylinders in the direction of their length, and are actuated by a cam shaft quite similar in construction to that of a gasoline motor. The drive is by propeller shaft to the rear live axle, a clutch of very simple form (a sliding pinion moving in and out of an internal gear in the center of the clutch—a connection which is used in some gasoline car change-speed gears for the direct drive) being interposed.

Water tanks are carried under the body, and at the rear, in the position that it occupies on a Mercedes car, is a gasoline tank. The motor is rated at 20-horsepower under normal working conditions, and the tank capacities are: Gasoline, 18 gallons, and water, 25 gallons.

All the machinery is carried on a main frame of pressed steel and channel steel cross members where needed; in fact, in its general construction the car in no wise differs greatly from the best modern gasoline car.

In the construction and operation of the power plant there are many little refinements and ingenious devices employed to secure simplification of parts and efficiency of operation that it is not possible to include in a general description of the car. The essential feature of operation lies in the simultaneous pumping under pressure of water into the steam generator and fuel into the burner. For this reason, therefore, the rapid generation of steam stops when the engine is stopped, as the feed and fuel pumps are connected to the engine. The stroke of both pumps, which are yoked together and are placed vertically under the footboard, can be varied at the will of the driver. Under the hand steering wheel there is a hand wheel in the same plane which, when turned, shifts a quadrant that engages the pump yoke, the stroke of the pumps varying from zero when the yoke is in the center of the quadrant to the maximum when the quadrant is shifted so that the yoke is at the end. One end of the quadrant is attached to a sliding block connected with drag links to which motion is imparted by a nut, working on a coarse-thread screw that is turned left or right by the motion of the controlling wheel on the steering pillar. The other end of the quadrant is linked to a pin set eccentrically in a gear driven by a pinion on the engine shaft. The arrangement is very mechanical and not unlike the well-known Walschaert gear used abroad on locomotives and marine engines to operate the slide valves.

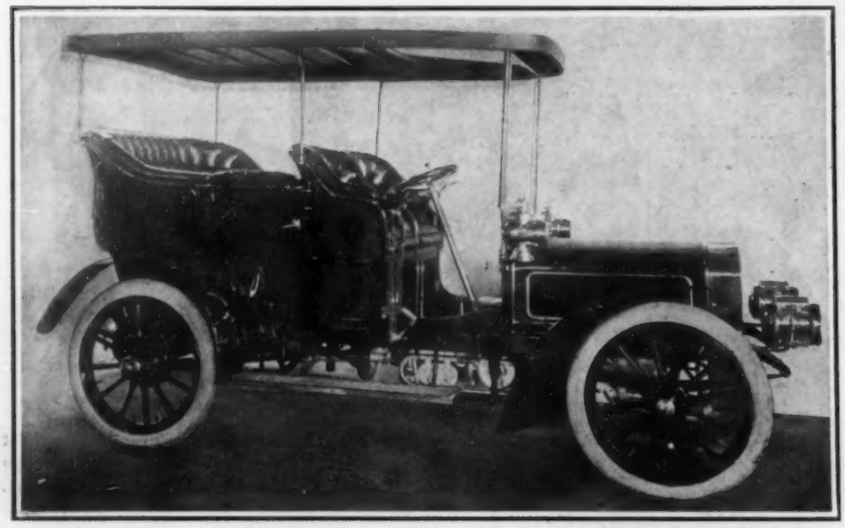
In running a car, therefore, the driver watches the steam gauge and regulates the stroke of the pumps to keep the steam pressure constant or increase or decrease it to meet the varying needs of travel. By-passes suitably introduced keep the feeds within the proper working limits.

On top of the steering wheel a small hand wheel is also fitted and connected with a throttle. When the driver leaves the car he pushes the steering pillar into a vertical position, and this automatically locks the throttle shut so that the car cannot be started accidentally. One of the side levers is connected with the cam shaft on the motor so that the shaft can be instantly shifted and the forward or backing cams brought into contact with the valve stems for reversing the direction in which the car may be going. The outside lever is connected with the emergency brake on the rear wheel hubs, and a foot pedal sets the working brake on the clutch drum. The fin tubular radiator in front is used for condensing the exhaust steam from the engine.

In the generator a high degree of superheat is said to be attained, and the working pressure is also high—about 800 pounds. For these reasons a high economy is claimed.

Lubrication has been carefully worked out. There is an automatic positive lubricator on the dash operated by the motor, and pipes run to the important bearings and also to each main steam pipe just above the valve chests.

In the car on exhibition the visible machinery appears to be well designed and the workmanship of a very high order. Car



CLARK SIDE ENTRANCE CAR, MOST EXPENSIVE STEAMER BUILT IN AMERICA.

details are also well worked out. Many of the components are standard parts, and the body work and fittings are highly creditable. It will be interesting to watch public appreciation of this vehicle, as it is the highest-priced steam car of domestic manufacture. A label on the car shown says that a duplicate has been sold to Elliott C. Lee, president of the Massachusetts Automobile Club and of the A. A. A.

For reference the following data are important: Horsepower, 20; wheel base, 108 inches; tread, 56 inches; tires, 36 by 4 1-2 inches; water tank, 25 gallons; gasoline tank, 18 gallons; weight, 2,600 pounds.

White Steam Car.

In speaking of American cars, it is often said that there are several steam cars on the market and the "White system." This, no doubt, is caused by the similarity of the car to a gasoline machine in appearance, and to its great popularity as a highly specialized product. The ordinary operations of steam-car manipulation are not associated with the White car in the public mind, and often when it is pointed out to a novice on the road he finds it difficult to place it in the steam class. Without question it is the great success of the White system that has infused new life into the steam car—in its touring form, at any rate.

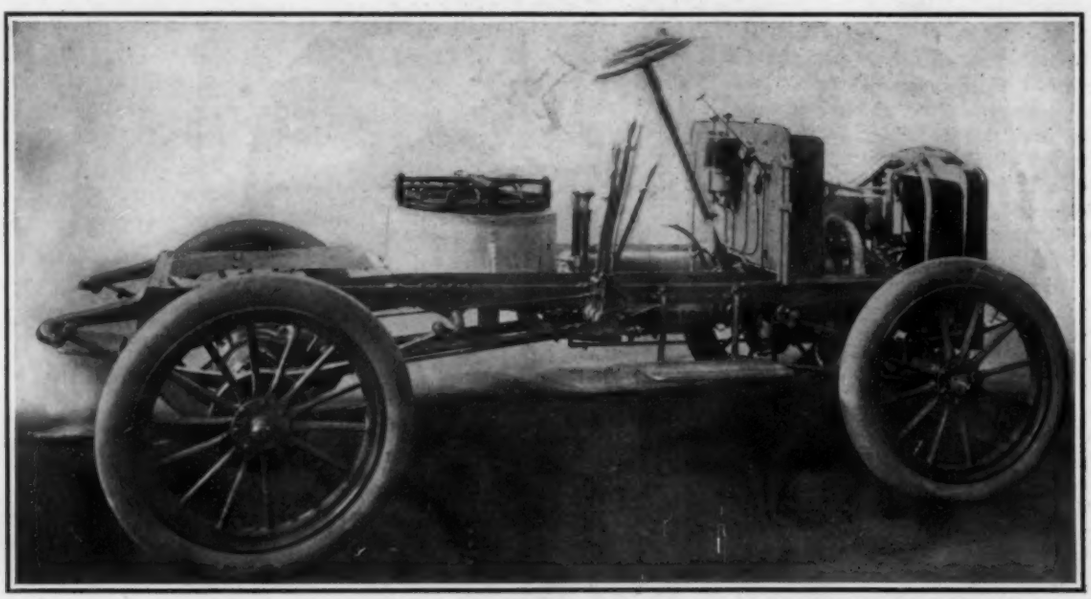
The White car is so well known that any extensive description of it would be quite superfluous, yet it will be of comparative interest here to touch upon some of the leading features. At the show the chassis on exhibition is a center of attraction that no display of the complete cars can rival. An inspection of the photograph on this page will show the general arrangement of the 1905 model, which differs only in minor details from the previous year's model.

Between the water tank in front of the dash and the familiar front condenser is the vertical compound engine with cylinders 3 inch by 5 inch by 3 1-2 inch, and slide valves worked by Stevenson link motion. Drive is by propeller shaft to the rear axle differential, with a change-speed gear interposed, giving ratios of 7 to 1 and 3 to 1. Back of the dash and under the footboard is the fuel tank, and further back inside the frame and under the body is the special generator. This has been increased in size by the addition of coils increasing the diameter of the circular nest of tubes. It is of the semi-flash type, and in operation its action is entirely automatic, leaving the driver practically free to give his attention to driving the car.

The generator is built up of helical superimposed coils of steel tubing with the burner in the usual position underneath. The feed water enters the generator at the top under pressure from the pump and fills these coils with water, the upper portion of the generator performing the function of a water heater. Passing downward to the coils the water is converted into steam, and is superheated before leaving the generator on its way to the engine. In this new model the engine exhausts into what is practically a closed condenser. A fan has been fitted to aid the draft between the tubes and maintains a current of air even when the car is standing still with the engine running. From the water chamber a pump working continuously when the engine is running carries the water back into the feed tank in front of the dash, thus completing the cycle of operations, just as in a steamship or land engine using surface condenser.

Automatic devices regulate the supply of feed water and fuel to the generator so that a balance is maintained and the steam pressure kept practically constant.

The manual control is quite simple. A small wheel inside and above the steering wheels controls the throttle. A foot pedal applies the working metal-to-metal internal



CHASSIS OF THE 15 HORSE-POWER WHITE STEAMER EXHIBITED AT THE BOSTON AUTOMOBILE SHOW.

brake on the engine flywheel. Of the side levers, that on the inside is connected to the link motion so that the engine can be run in the ahead or backing position or put on center at will, just as in a locomotive. The middle lever controls the change-speed gear for hill climbing, and also disengages the gears so that the engine can be run free and drive its own pumps to get up a full head of steam in starting, eliminating the necessity for pumping by hand which exists in the older model. And the outside lever is the regulation emergency brake connected with metal-to-metal internal expanding brakes in the rear wheel drums. A press-down pedal controls the "simpling" device by which live steam is admitted to the low-pressure cylinder, as well as the high pressure cylinder of the engine, changing it from a compound to a simple engine and giving a great increase of power in emergencies, and also preventing the engine from "sticking on center" when starting.

56 inches; diameter of wheels, 34 inches; tires, 34 by 4 inches; water tank capacity, 17 gallons; gasoline tank capacity, 15 gallons; weight, empty, 1,600 pounds.

Complete cars are shown with rear entrance tonneau, canopy top and limousine bodies, all of the neat, trim White design. The car is built by the White Sewing Machine Company, of Cleveland, O.

Grout Touring Car.

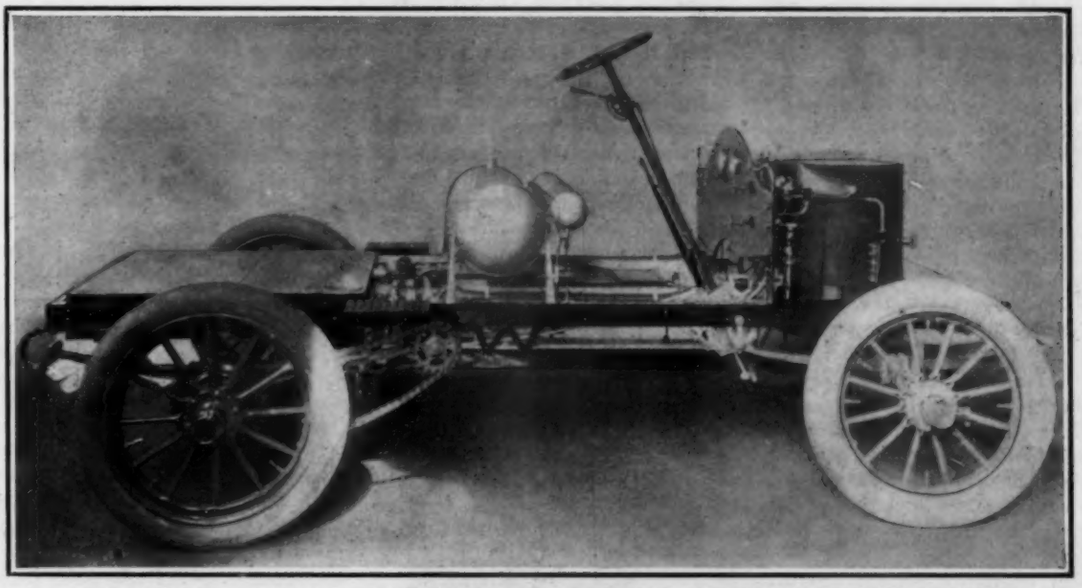
A car which has been long before the public, and in which the power plant is on an entirely different system from that already described, is the Grout, built and exhibited by the Grout Automobile Company, of Orange, Mass. This concern started in the nineties, and has progressively worked from the light steam carriage of the earlier days to the modern type of touring car of which the self-contained chassis is shown in the engraving on this page.

The 1905 car is built with regular side-entrance, double-phaeton body and a barrel-shaped hood in front of the curved dash with lamp in the center, recalling a locomotive at first glance. The resemblance is even stronger when the mechanical details of the power plant are considered, for it has the fire-tube boiler and double-cylinder, high-pressure engine without condenser that are typical of the majority of railroad locomotives of to-day.

ferential on the countershaft, which lies further to the rear of the car in the position usual in a side chain gasoline vehicle. The outboard ends of the countershaft carry the usual chain sprockets, which drive by chain to the rear road wheels. In the center of the car the fuel and supplementary air pressure tanks are carried on bearers transversely under the body. Over the rear axle the frame inside is filled with a large rectangular water tank. The frame is of armored wood construction, and carries under it semi-elliptic springs over the front and rear axles. Underneath and suspended from the frame cross members is a long flue which carries the waste gases to the back end of the car. This flue passes through the tank in the back of the frame and the waste gases warm the feed water before passing out into the atmosphere.

The boiler is copper, reinforced with steel wire wound around the barrel. It does not show in the photograph, the sheet iron covering of the non-conducting lagging hiding it from view. The engine is of simple design, with Stephenson link motion for going ahead and reversing and altering the point of cut-off. On the steering pillar a lever working on a notched quadrant controls the throttle valve, and the center hand lever shown in the photograph to the left of the steering pillar shifts the links, being held in position by a latch. An interlocking device connects the foot brake and throttle lever so that the motion of setting the brake shuts off the steam supply from the engine.

A commendable feature of this car is the recognition which the builders have given the constitutional objection of plunger pumps to run at high speed. Both the air and water pumps are of good dimensions and are worked by eccentrics off the countershaft, the air pump having a claw clutch



CHASSIS OF THE 12-HORSEPOWER GROUT SIDE ENTRANCE STEAM TOURING CAR, WITHOUT CONDENSER.

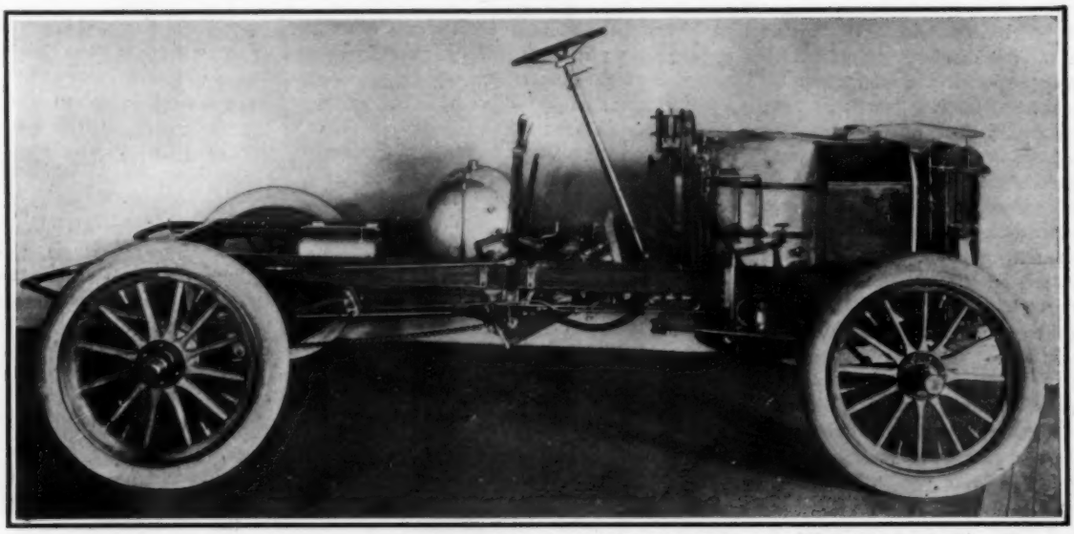
The vertical pipes fitted with plungers, showing in the photograph immediately in front of the generator, are the hand fuel air pressure and generator feed pumps, both retained in the new model though seldom used, except when originally starting up.

It will be understood, of course, that the photograph shows an exhibition chassis, and that in a chassis ready for use the generator coils are not exposed, but that the generator is completely encased, the products of combustion passing out through side flues.

In its structural details the car follows the general style of motor-in-front build. The frame is compound, of wood and steel; springs are semi-elliptic, those at the rear carried outside the frame, and they are long and flexible.

Data of the chassis follows: Rated horsepower, 15; length, 139 1-2 inches; width, 63 1-2 inches; wheel base, 93 inches; tread,

In details, of course, the working out of the systems on a locomotive and on the automobile differ radically, though fundamentally alike. In the Grout the cylindrical vertical fire-tube boiler is carried inside the frame in front of the dash. The engine of the double-cylinder, simple, high-pressure type lies in a horizontal position lengthwise of the car back of the dash on the left side, and with the cylinders pointing forward. A sprocket on the crankshaft is connected by a short chain to a sprocket on the dif-



CHASSIS OF LANE 15-HORSEPOWER COMPOUND INCLINED ENGINE STEAMER EQUIPPED WITH CONDENSER.

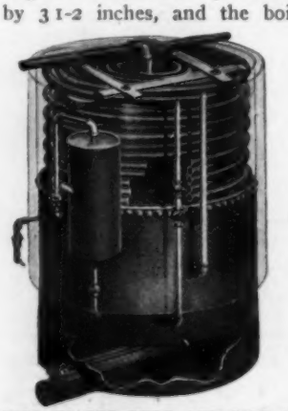
connection so that it can be disengaged and allowed to remain idle when not needed.

Lubrication seems to have been carefully considered. The motion of the engine and the chain from the engine to countershaft are enclosed in tight cases and run in oil baths. In the lowest point of the engine case a pocket is formed and a mechanically driven oil pump installed. From this oil pipes are carried over the main bearings and crank pins, with perforations in the pipes so that when the engine is running these parts are subjected to a continuous shower of oil. Cylinder lubrication is automatically taken care of when the car is running by a force oil pump driven off an eccentric extension of the differential casing on the countershaft. This pump draws its supply from a small tank placed inside the frame alongside the pump, and fitted with a hinged lid which permits ready inspection of the supply of oil in the tank. The oil pump is arranged so that it can be operated by hand without interfering with the power drive, so that if needed before starting up, after the car has been standing a long time, the pump can be given a few strokes to start a supply of oil to the cylinders. The oil feed pipe does not lead directly into the cylinders, but is tapped into the steam main before the latter connects with the valve chest. Thus the oil is taken up by the steam on its way to the engine and it is evenly distributed over the internal valves and pistons.

There is of course a proper installation of regulators for feed and fire worked out on the lines that long experience has suggested, and an auxiliary hand feed pump. Forced draught by steam jet is taken care of automatically or positively at the will of the driver. There is a connection between the throttle valve-control lever and the draft valve by which the draft is shut off when the throttle is opened, and vice versa. And by a simple movement the automatic connection can be disengaged and the draft regulated independently by hand.

The side entrance body has nice lines and roomy seats. Under the rear seat and outside there is a trunk strapped in place. The footboard in the phaeton body lifts up and gives access to the countershaft and connections. On the sides wide running boards and sprocket steps are conveniently placed for getting in or out of the car. All road wheels are ball bearing.

The engine has double cylinders 2 3-4 inches by 3 1-2 inches, and the boiler is



COMBINED WATER-TUBE AND FIRE-TUBE BOILER OF THE LANE STEAMER.

18 inches in diameter and contains 455 half-inch tubes.

Data follows: Engine horsepower, 12; wheel base, 88 inches; tread, 56 inches; springs, 42 inches; tires, 30 inches by 3 1-2 inches; gasoline capacity, 15 gallons; water capacity, 45 gallons; weight, 1,750 pounds.

Lane Compound Engine Car.

In the Lane exhibit is another interesting example of the development of the steam vehicle into a touring car following very closely in exterior appearance the lines of the modern gasoline motor-in-front machine. The Lane Motor Vehicle Co., of Poughkeepsie, N. Y., is a familiar name in steam-car construction that in the earlier days was a successful aspirant for honors in various public trials. The exhibit includes a chassis and a complete side-entrance touring car, which was also offered to public attention at the Madison Square show. Though showing the general outlines of a gasoline car in common with the others already described, this machine embodies a number of features not found in the other cars, and in design and construction is quite different.

The Lane has a compound engine and a condenser, both of special design, and the unusual feature of a combined water-tube and fire-tube boiler.

In the accompanying photograph taken for The Automobile at the Boston show the general arrangement of the machinery in the chassis is quite clearly shown. In front there is a radiator composed of long, flat tubes set in rows three deep, and connected at top and bottom with headers. Back of this is a wind shield which carries the air after it has passed through the condenser downward beneath the body. The curved top of this shield is plainly seen in the photograph. Back of this is the water tank, immediately in front of the boiler.

This boiler is cylindrical in form, and is built in two sections, the upper portion being composed of superimposed helical coils of water tubes, and the lower a regular fire-tube boiler. Its special construction is made very plain in the accompanying sectioned illustration on this page. Back of the dash and beneath the footboard a cross compound inclined engine is hung with the crank end down and the cylinders forward. A sprocket on the crankshaft is connected by a single chain with a spur gear differential on the rear axle. In the center of the frame and under the body the cylindrical fuel tank is placed across the frame, and back of this on the left side the supplementary air tank.

So much for the disposition of the machinery, and now as to the system of operation. From the water tank the feed is pumped to the top of the coils in the boiler, meeting here the coolest gases, this section of the boiler acting in effect as a water

heater. Passing downward through the coils, the water comes in contact with hotter surfaces, and steam is generated so that from the bottom coil a mixture of steam and water passes into a centrifugal separator, seen on the side of the boiler in the illustration on page 410. From the top of this separator a pipe leads into the steam space in the fire-tube shell which forms the lower half of the boiler, and from the bottom of the separator another pipe carries the entrained water into the water space in the shell. The main supply pipe to the engine is connected with the steam space in the fire-tube shell, and as the steam in this space is in direct contact with the fire tubes a considerable degree of superheat is reached. The flues in the fire-tube section of the boiler are made of relatively large diameter, allowing the process of combustion to go on rapidly while the gases are passing upward through this section of the boiler, so that by the time they reach the top of the coil and the coldest surfaces combustion is practically complete.

The engine has cylinders 3 1-4 inches and 5 1-4 inches by 3 1-2 inches, and is built with the valve chest inside and overhung cranks. A case surrounds the working parts and splash lubrication is employed, the cylinder lubrication also being usually taken care of by the oil carried into the cylinders by the rods. From the engine the exhaust steam goes to the upper header of the condenser at the front of the car, condensation being effected by the passage of the steam downward to the bottom header, where the water is collected. From here the water is returned to the feed tank by back pressure, which, the builders say, seldom exceeds one pound. There is a vent from the top of the tank to the atmosphere. The feed on its way back to the boiler again passes through a coil in the upper header of the condenser, where it is heated by the incoming exhaust.

The manual control follows the method adopted on most gasoline cars. There are two side levers, the inside one connected with the Stephenson link motion of the engine for reversing the direction of motion when the car is running. The outside lever is connected to two band emergency brakes on the rear wheel hubs. A lever on the side of the pillar just below the steering wheel controls the throttle and a lever on the other side regulates the by-pass. A foot pedal applies the service band brake on the rear axle differential, and a push button opens the simpling valve when it is desired to run the engine high pressure instead of compound.

Air pressure for the fuel feed is maintained automatically by an air pump in which a screw regulation of the clearance space between the valves is provided, so that when set for a predetermined pressure the pump will not need further attention.

There is the usual automatic control of the generation of steam and also steam-driven pumps entirely independent of the engine. These and the various valves for regulation are conveniently contained in a recess in the dash, covered by an aluminum door. When the door is removed all are accessible to the driver, who can thus control all functions of the machinery without leaving his seat.

The frame is built up of steel plate and sections, and the running gear is of accepted type, and calls for no special mention.

The complete car shown has a double phaeton body with curved backs and a neat hood over the boiler and tank. The flue from the boiler is carried downward beneath the car.

Data of this car includes: Horsepower, 15; boiler diameter, 20 inches; wheel base, 97 inches; tread, 56 inches; tires, 32 by 4 inches; fuel capacity, 17 gallons; water capacity, 20 gallons; weight, filled, 2,200 pounds.

Another Distinct Type.

All of the foregoing descriptions apply to large steam touring cars, in which the construction follows the modern motor-in-front or French design. In those cars the machinery is all carried on a self-contained chassis and the body is quite independent. Some of the builders, indeed, carry in stock both open and closed bodies which are fitted to the same chassis, so that the purchasers can have both if he likes and fit on the type of body best suited to the use or season in which the car is employed.

There is another and quite distinct type of car, however, which in its present form is a development of the early steam car, a vehicle partaking more of the orthodox horse-drawn carriage in general outlines and one in which the type of body is permanent for each car. In this type the steam generating and propelling apparatus is usually contained in and attached to the body itself and the wheels and running gear are separate—practically the reverse of the arrangement of parts in the machines first described.

The carriage type of to-day, while resembling the original American type of steam car in general characteristics, is an infinitely superior machine in its detail construction. The few builders of the type now in the field are survivors of the much larger number in the earlier days, and therefore have had a long experience with the special needs of this form of construction. By a judicious arrangement of the apparatus and its functions, and by mechanical design and workmanship in the power plant, they have produced a type of car that is low in price, of great durability when any sort of care is exercised in operation and maintenance, and one that (considered merely as an automobile, without special relation to the form of motive power employed) is a highly efficient machine.

Prescott Doctor's Car.

In this class the exhibit of the Prescott steam car is of more than passing interest. Two cars are shown by the Prescott Automobile Mfg. Co., of Passaic, N. J., one that is shown in the accompanying reproduction of a photograph on this page—and the other car without top. The Prescott first appeared on the market in 1901, and it has remained in favor with purchasers ever since, despite the enormous encroachments of gasoline cars on the field which was originally dominated by steam.

The car illustrated shows the steamer reduced to its simplest form, the power plant embracing a high pressure fire tube boiler and upright two-cylinder simple engine with Stephenson link motion, driving by center chain to the rear live axle differential. It has the original form of side lever steer, which is sensitive and, in the mature judgment of the builders, best suited to a car of

PRESCOTT STEAM CARRIAGE, STYLED THE DOCTOR'S AUTOMOBILE.

comparatively short wheel-base. This Prescott car is styled the "Doctor's Automobile," as it has been built with the special needs of a physician in view.

A doctor's car must perforce be left standing out-of-doors much of the time, and to make this quite feasible the power plant, where ordinarily exposed to the weather, is enclosed in a sheet-metal casing heavily lagged with non-conducting material. The only length of piping outside this casing is that to the steam gauge on the dash. To prevent the freezing of this connection, the pipe is made in a loop, the exposed portion of which is filled with oil.

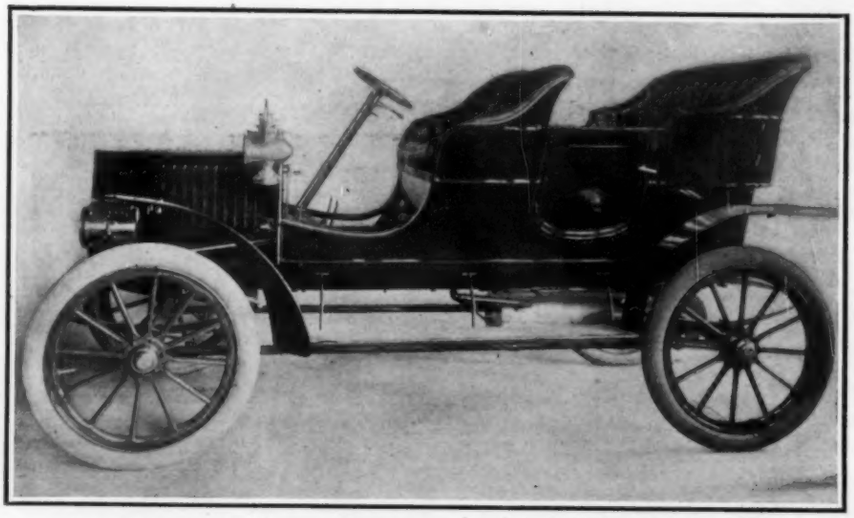
As usual in machines of this general type, the engine and boiler are both placed vertically under the seat, the engine in front so that the cylinders are easily accessible above the footboard. The boiler is of the fire-tube type; 16 inches in diameter and fitted with 3-4-inch nickel steel superheater coils. A Mason 2-cylinder engine is used, with cylinders 2 1-2 and 2 1-2 inch by 3 1-2 inch, rated at 7 1-2 horsepower under a normal working steam pressure of 250 pounds. The tanks are carried in the body; the main fuel tank of copper, with 10 gallons capacity, and the water tank, with 32 gallons capacity. Besides these there is a supplementary fuel tank of 2 1-2 gallons capacity, which can be used should the main tank be emptied when the driver is out on the road and supplies are not near. This is a sort of insurance against total disablement that many auto owners will appreciate.

The crankshaft is, of course, at the bottom of the engine, and from a sprocket on it the driving chain leads out to the rear axle differential, at an angle to the horizontal dependent upon the difference in diameters of the two sprockets. From the top of the boiler a flue is carried downward, into which the engine exhaust is discharged, and the open end of this flue is directed toward the lower half of the chain. The velocity of the waste gases thus blows dirt off the chain and the oil in the exhaust from the engine lubricates it automatically when the car is running.

Double elliptic springs carry the body of the car, the axles being connected by round, tough, hickory reaches. Wheels are of the artillery type, with tires 28 inches by 3 inches. The spring work is good and very flexible and should give a very smooth riding car.

In the car photographed there is a collapsible Victoria top on the principal seat, and there is a folding seat in front, a feature of this seat being a leather dash which folds up when the seat is to be closed. Leather is also used for the mud guards.

A sample engine is on exhibition at the stand, and it shows good workmanship; in fact, it is a real engine and not the toy that was so much in evidence in the early steam days. The crossheads are ball bearing, the links and connections of good size, and the workmanship seems excellent. It is substantial, too, scaling at 95 pounds.



NEW MODEL STANLEY STEAMER WITH WHEEL STEER AND SIDE ENTRANCE BODY.

In addition to the pumps driven by the main engine and the automatic control devices for regulating the fire and boiler feed, there is an auxiliary steam water pump and an independent air pump, which latter can be used for inflating the tires.

Manual control includes the side lever for steering, a small vertical lever at the right of the driver's seat, opening or closing the throttle, a left foot pedal for reversing the engine and a right foot pedal for setting the brakes, which are of the external band type on the rear wheel drums.

In the regular burner equipment an atomizer is used in connection with the main fuel supply on the main burner aiding the rapid raising of steam, and the pilot light is connected with the main fuel tank so that it will keep up steam for an extremely long period when the fuel supply is not neglected. An endurance of 53 miles on one filling of the water tank is claimed for this car by the builders.

Data of the car follows: seating capacity, 2 or 4 persons; wheel base, 68 inches; tread, 54 inches; boiler, 16 inches diameter; engine, 2-cylinder, 7 1-2 horsepower; weight, empty, 1,000 pounds; weight tanks, filled, 1,400 pounds.

Stanley Touring Steamer.

A car that has a high local reputation, but which is practically unknown in many other sections, is the Stanley steamer. This is not due to any inherent peculiarity of the machine but to the business methods of the manufacturers, who boast that they never advertise. The extensive exhibit at the show, however, is rather a contradiction of this statement, for it would need something more than mere assertion to convince the visitor that the car is shown here by the makers out of pure philanthropic motives. Large cards proclaiming the achievements of this car in competitions and the price of each vehicle, are conspicuously displayed at the stand.

This steamer is built by the Stanley Motor Carriage Co., of Newton, Mass., the Stanley Brothers, who control the corporation being among the early pioneers in the automobile industry in America. Hitherto their name has been associated with the little Stanley runabout, seating 2 or 4 persons, with folding front seat, lever steer, and the now antiquated wire wheels. For the first time at any show the type recorded by the Automobile photographer on this page is exhibited. This, at first glance, closely resembles the regular motor-in-front or French construction. A closer inspection, however, will show that the resemblance does not go beyond the body outlines.

Heavy oak sills compose the frame which carries the boiler, the auxiliary machinery, the tanks, and the body, and to these sills the full elliptic springs are secured, the lower halves being clamped to the axles. Tough hickory reaches connect the axles and keep them in alignment. The boiler of the cylindrical vertical fire tube type is housed under the front bonnet which has a flat top, straight sides and semi-circular front. Under the front seat the motor tank is placed, and under the rear seat the main fuel tank. Below the body, a 2-cylinder, high-pressure engine is suspended horizontally, with the cylinders forward. A vertical hinged strap connects the cylinder end of the engine to the body and at the rear end an extension of the engine frame is trunnioned on the rear axle on each side of the differential casing. There is a center spur pinion on the engine crank shaft and this meshes in a larger spur gear of the rear axle differential. These gears are kept in mesh by the trunnion bearings in the engine frame extension, and the bearings prevent binding in the up and down movements of the axle when running. A short, flexible rubber connection is inserted in the main steam pipe, which can be seen in the photograph leading from the under side of the body to the cylinder end of the engine, and this permits of the movements of the engine

in relation to the body when the car is in operation.

In this type car a 20-inch boiler is fitted, with a rated capacity of 20 horsepower. A peculiarity of its construction is that the shell is not riveted. Copper is used for the shell and the fire tubes, and the heads are of steel. They are held in place by steel rings, top and bottom, shrunk on. Each boiler is subject to a hydrostatic test of 1,000 pounds pressure when built and is intended to be worked at a normal steam pressure of 400 pounds per square inch. The burner aperture and valves are located in front so that the driver need not stoop down very low to get at them. Firing up is accomplished by a separate torch. A superheater is fitted. No water glass is used, but, instead, a float connected with a wire indicator on the dash, the position of which tells the height of water in the boiler. The burner is not fed direct from the main fuel tank but from an auxiliary tank which contains about a pint of gasoline, so that only a small amount of reserve fuel is under air pressure at any one time.

The engine, which has double cylinders 3 1-2 inch and 3 1-2 inch by 5 1-2 inch, is built very light, with a frame of steel rods, and is fitted with regular Stephenson link motion. Ball bearing crossheads are used; in fact, if we are not mistaken they were first employed in Stanley engines. The differential is of the spur gear type and it carries band brakes on the outside of the casing. In this model the wheels are of the artillery type and fitted with 3-4-inch ball bearings.

Concerning the handling of the car: Steering is by hand wheel instead of the side lever used in the runabouts. The long lever seen in the photograph under the steering wheel, controls the throttle and below this on the post is a smaller lever connected with the boiler feed by-pass. To reverse the car, the left foot pedal is pushed forward, and the differential band brakes are set by the right foot pedal. The foot board lifts up and exposes the valves and pipe connections so that they can be reached readily and without the necessity of getting under the car. The usual automatic regulators are fitted in the piping systems.

Looking at the reproduction of the photograph, one can see that the body lines are good; the wheel pillar has a smart rake, and the bonnet is large enough to give balance to the design. Mud guards of liberal proportions are fitted and long side running boards. Both side entrances are of good width and there is seating accommodations for 5 persons. As the car is light and the boiler capacity large, it should be easy to maintain a good road speed, even on hills, carrying the full passenger load.

Data of this model includes: Horsepower, 20; wheelbase, 98 inches; tread, 56 inches; tires, 32 by 3 1-2 inches; gasoline capacity, 17 gallons; water capacity, 25 gallons; weight with tanks filled, 1,500 pounds.

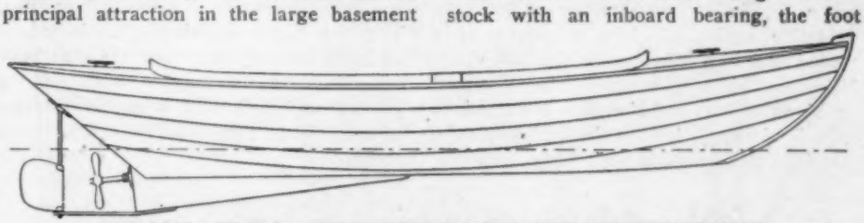
Motor Boats at Boston.

Staff Correspondence.

BOSTON, March 17.—Power boats are the principal attraction in the large basement at the Boston Show. Motoring on water attracts very much the same class of persons that automobiling on land does, and here, as at the big foreign shows, the boat feature of the annual show is an important one. It is regrettable that the location of the building is such that no body of water is close enough to show the exhibits afloat. A boat in a dry cellar is not in the most attractive surroundings, and when the cellar is in a state of perpetual gloom, the effect is not more pleasing.

There is a more extensive collection of boats on exhibition here than was to be seen at the recent New York motor boat show in the Garden, and though there are only a few that could be classed as auto boats, yet there are several types of pleasure boats that were not represented in the Garden show at all.

Of these the most interesting is the dory, a type of boat which immediately associates itself in the mind with the fishing fleets of the New England coast. This, in its primitive form, is a pulling boat, very beamy, with high freeboard and pointed ends, sharp at the stem, which is spoon shaped, and blunt at the stern which is raked outward at an obtuse angle to the keel. Several boats of this type, with modifications sold under different prefixes, are shown in a fine exhibit of The Atlantic Co., of Ameshury, Mass. An outboard profile of the motor dory is reproduced on this page. It will be noted that the boat is lapstrake build, with a good deal of shear, and is fitted with a wooden skeag protecting the propeller in shoal water. The rudder hangs from a stock with an inboard bearing, the foot pivoted in an iron strap extending out from the after end of the skeag. The ends and sides are decked, and a coaming or wash rail is run around the cockpit. For a boat of the size—about 20 feet—the passenger capacity is large and is accommodated on thwarts, and fore and aft seats forward of



OUTBOARD PROFILE OF POWER DORY, A NEW ENGLAND TYPE OF BOAT.

EXHIBIT OF THE WHITE STEAM CARS AT THE BOSTON SHOW.—A TYPICAL STAND IN AUDITORIUM OF MECHANICS HALL.

the motor. Oak is used for the frames and motor seating, and pine for the planking. The motors regularly installed are, of course, of low horse power, of the conventional 2-cycle boat type, and the selling price of the outfit is low.

At this stand a 25-ft. speed launch is shown from the designs of L. F. Hewin, of the naval Bureau of Constructian and Repair. The model has been the subject of tests in the experimental tank at the Washington Navy Yard and the actual model tried out in the tank is on exhibition. There is nothing freaky about the craft which is modeled on torpedo boat lines.

Most important of all the exhibits is the auto boat *Hupa*, built by George Hawley & Sons, of South Boston, a yard famous for the production of some of the *America's* Cup defenders. The boat was designed by Arthur Binney, of Boston, and exteriorly is a beautiful launch not only in her smooth, fair, lines, but in the excellence of the planking and finish. She is of large dimensions and is carried in cradles, and, as there is no side ladder, the visitor must be content with "looking up" at her from outboard.

The dimensions are: Length over all, 63 feet; length on the water line, 61 feet; beam, 7 1-2 feet; draft, 2 feet. The motor is a 6-cylinder, 100-horsepower Standard gasoline engine which is displayed on a stand near by. Below water the hull is finished in white with green top sides and gold water line, and the deck is varnished. She is of torpedo boat model, with fine ends, straight stem, outside keel, body lines carried up to the plane of flotation at the after end and inward sloping transom, in plan a flat curve. The propeller is 3-bladed, carried on a V-bracket, and there are apparently three cockpits. She was built to the order of a Philadelphia owner.

One auto boat is shown on the main floor in the Panhard exhibit. This is the racer *Panhard II*, exhibited at the Garden show in New York, and described at that time. At this stand there are two Panhard boat motors of the racing type, with forged steel cylinders—two beautiful specimens of engineering work.

Another speed boat in the basement, long and narrow, on torpedo boat lines, is named the *Ronomor*, and is shown by the Perkins Launch & Motor Co.

Many builders of the ordinary, or fresh water variety of motor boats, show the output of their shops; boats in which varnish, brass bedstead rails and motors of the cook stove variety are prominent features. Taking all the boats shown, one with another, the average of design and workmanship is higher than at the New York show. This is more particularly the case with those boats shown by New England builders. They display an expert knowledge of vessel construction, are well designed, not freaky, and the timbering is ship shape and never flimsy. The New England craft give the impression of being built by men who are boat builders and know the sea, and have not that planing mill look that is so characteristic of many boats, especially those from inland shops.

Novelties in Sundries on Exhibition.

Staff Correspondence.

BOSTON, March 18.—The exhibits of automobile sundries, accessories and parts, while large and embracing everything of any practical use on and about an automobile, were of interest to the individual user of an automobile rather than to the manufacturer, though there were several exhibits of finished and unfinished components that were of unusual interest. Sundries and accessories, however, such as lamps, horns, goggles, clothing, pumps, tools, and the like, were very greatly in the majority and gave the show a distinct air of being a users' rather than a manufacturers' exhibition. Visitors seemed to prefer the exhibits of complete cars to those of sundries and accessories, as was the case at the Chicago show, and consequently the balconies, where the dealers in these necessities of automobilism held forth, were but thinly peopled, even while the main floor and the basement were crowded. It was remarked that only at the Madison Square Garden show in New York were the galleries well filled with visitors. Exhibitors who were on the main floor, sandwiched in among the cars, seemed to fare better; but did not command anything like the attention attracted by the machines.

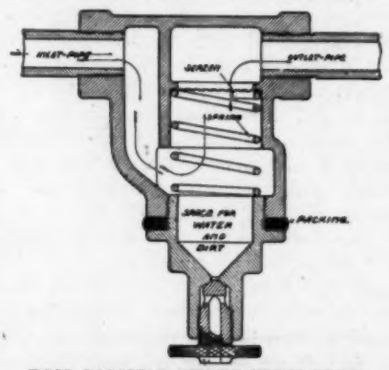
The first exhibit to catch the eye of the visitor on entering Mechanics Building was that of A. Shuman & Co., of Shuman Corner, Boston, which consisted of automobile clothing for men and women. The display was placed on a raised platform on the left of the corridor leading into the hall, the various garments being well displayed on lay figures. Some exceedingly attractive work in leather was shown, the material being of wonderful softness and pliability, more resembling some heavy, close cloth than the skin of an animal.

Jordan Marsh Clothing Display.

A highly effective way of exhibiting automobile clothing was adopted by the Jordan Marsh Company, of Boston, which showed full outfits of the latest styles arranged on lifelike wax figures seated in a handsome big green Napier car, as shown on page 388 in last week's issue. Two wax men and two wax women not only set off their garments in the best way, but under the most appropriate conditions; and in order that there might be no monotony, their garments were changed occasionally. The exhibitors also had a large glass case in which many other articles were hung, the exhibit, as a whole, giving an excellent idea of the Jordan Marsh Company's ability to dress the automobilist properly for all weathers.

A Clever Gasoline Filter.

One of the largest and most attractive displays of accessories was that of the Angier Company, of Boston, which included practically all of the many articles required to complete the equipment of a car. This concern has the agency for Continental tires, Rushmore searchlights, Gray & Davis automobile lamps, Leon Rubay's imported ignition apparatus, the Jones speedometer, the Prest-o-lite compressed acetylene tanks, a particularly large assortment of French automobile horns, and a long list of other articles. A very neat device noticed at this stand was a gasoline strainer, or filter.



BOSS GASOLINE FILTER WITH TRAP.

This consisted of a trap with inlet and outlet connections for the gasoline supply pipe. The gasoline on entering the filter falls to the lower part of the trap, which hangs below the level of the piping, and has to rise and pass upward through a fine wire screen before passing into the outlet. Dirt which rises with the fluid strikes the lower part of the screen and works down into a cavity in the lowest part of the trap, where water also collects. A valve is provided for drawing off the water and sediment. The fact that foreign matter in the gasoline does not rest on top of the screen is considered of importance. The lower part of the device, including the valve and sediment cup, can be removed easily by unscrewing, and the wire gauze screen, which is held in position by a spring pressed upward by the removable cup, comes out at the same time. The trap is made entirely of brass, and is small and simple, with nothing about it that is likely to get out of order.

Incandescent Lamps for Various Uses.

A well-arranged exhibit of automobile accessories and sundries is always attractive, and that of A. J. Wilkinson & Co., of 180 Washington street and 25 Devonshire street, Boston, was no exception to the rule. In addition to a comprehensive assortment of the usual things needed by the automobilist, there were shown a number of small incandescent electric lights for use in and about the car for gauge lights, for illuminating recording instruments, speedometers, and the like, and for examining the dark recesses of the machinery when necessary.

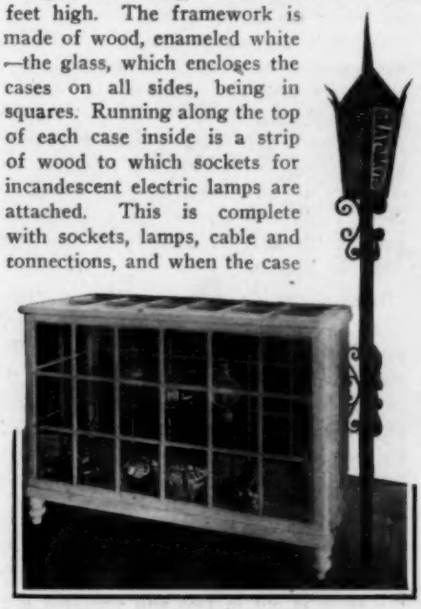
These lamps were adapted for use with dry batteries, which are furnished in various shapes and sizes so that they can be placed in almost any corner, out of the way, renewals being provided for at slight expense. A very neat set consisted of a pair of gauges for a steam car—a steam gauge and an air gauge—mounted on a baseboard with a reflector and lamp arranged to shed light equally on both. A battery was secured on the same board, the outfit being self-contained, compact and decidedly sightly. A clock was shown similarly illuminated.

New Ideas in Goggles.

Goggles in great variety constituted the exhibit of the Globe Optical Company, of 403 Washington street, Boston. All the well-known forms were shown, and, in addition, several novelties with special features of merit. Among these was a collapsible goggle with a single plate of heavy glass extending across from eye to eye, the whole goggle crushing down into a flat case for carrying in the pocket. Another goggle was so constructed that the distance between the glass and the eye of the wearer could be adjusted to give the best results.

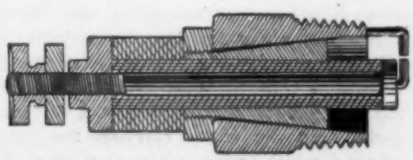
Labor-Saving Lamp Showcases.

There are sometimes features of interest in exhibits that are overlooked by practically all, but which nevertheless possess merits that entitle them to special notice. One of the things that went unnoticed by most people was the construction of the glass showcases in which the well-known lamp manufacturers, Gray & Davis, of Amesbury, Mass., placed their exhibit of automobile lamps. These cases are so made that they can be knocked down flat for shipping from place to place, and are packed for shipment in special boxes, into which they fit snugly. Six of them are used, each being five feet long, two feet wide and three feet high. The framework is made of wood, enameled white—the glass, which encloses the cases on all sides, being in squares. Running along the top of each case inside is a strip of wood to which sockets for incandescent electric lamps are attached. This is complete with sockets, lamps, cable and connections, and when the case is put together it is merely necessary to make connection with the electric light fixtures by means of the usual plug arrangement. The cases are attractive in appearance, and, besides protecting from dust the lamps exhibited, provide a setting well adapted to bring out their outward beauties.



COLLAPSIBLE CABINET AND ANTIQUE LAMP AT GRAY & DAVIS BOOTH.

A special patch for repairing inner tubes was shown by Charles O. Tingley & Co., and seemed to possess an advantage over the ordinary patch. The side of the circular patch which goes next to the tube is coated with raw or unvulcanized rubber. The patch is applied in the usual way, and if the work is done in the garage a hot iron is passed over it, which is said to have the effect of vulcanizing the raw rubber on the patch and causing it to adhere very strongly. If the patching is done on the road the heating is, of course, omitted; but the heating of the tire by fast running or by a hot sun will cause it to adhere more firmly instead of loosening it. A sample patch shown at the stand certainly seemed to stick most tenaciously.



BOSTON TAPER-BUSHED SPARK PLUG.

The Tingley company also exhibited the Boston spark plug, a neat-looking plug insulated by a conical winding of sheet mica around the core. The bushing is tapered slightly more than the taper of the shell which fits over it, and in screwing the parts together the bushing is forced hard into the shell, forming a very solid joint.

Combined Speedmeter and Odometer.

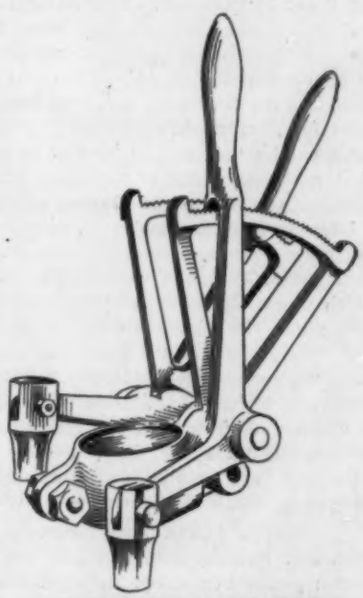
Some interesting specialties were shown by the Park Square Automobile Station, of 43 Columbus avenue and Providence street, near Berkeley street, Boston. Among the exhibits was the Hodgson speedmeter, an instrument intended to be attached to the dashboard of the car and operated by a flexible shaft which carries a pinion meshing with a gear attached to one of the front hubs. This instrument not only combines a speedmeter for indicating the momentary rate of speed of the car, with an odometer indicating the distance traveled, but also shows disks of various colors, each color indicating a certain speed, so that it is possible to tell, by glancing at the disk, whether the car is exceeding the legal speed rate, for instance. These colors can be seen by persons in the road or on the sidewalk, and are designed to be especially useful in case the car is erroneously stopped by the police for fast running. Another valuable article shown was a fire extinguisher made by the Standard Fire Appliance Company. It consisted of a cylindrical tube containing a dry powder possessing remarkable fire smothering qualities. These extinguishers are made especially for use on automobiles, and are of convenient form and size. The National kerosene burners for steam automobiles were also seen at this stand, and were examined by many users of steam cars, who are plentiful in and around Boston.

Durable Cape Cart Tops.

Automobile tops of the Cape cart type were shown by E. Teel & Co., of Medford, Mass., whose exhibit contained some good specimens of top work. The material used for the covers was of the usual brown fabric, its strength and durability being well illustrated by a top which was on exhibition after having been used for a long time in all kinds of weather, and which looked but little the worse for wear. It was particularly noticeable that the large sheets of flexible, transparent material used for windows in this top were apparently as good as new, notwithstanding many rollings and unrollings. The frames were constructed in a manner which make them exceedingly compact when folded and rigid, and non-collapsible when extended.

Control Appliance for Steering Column.

Appliances for concentrating and making more convenient the control of a car were exhibited by the Saunders Controller Company, of 9 Everett street, Melrose, Mass. One group consisted of two levers, one for the spark and the other for the throttle, with a switch lever between them, all mounted on a frame intended to be secured to the seat of the car beside the driver. The switch is arranged for the usual double battery. Another form consisted of spark and throttle levers with a clip for attaching them to the steering wheel column, connections being provided for attaching rods leading through the footboards. The Saunders controllers are made of brass throughout, and the handles are provided with dogs pressed against notched sectors by springs, the dogs and springs being inside the handles and out of the way.



SAUNDERS CONTROL ATTACHMENT.

A number of the little things that frequently help to make motoring more satisfactory was shown in the basement by the More-Power Company, of 610 Gorham street, Lowell, Mass., manufacturers of automobile specialties. One of these was an auxiliary air inlet to be attached to non-automatic carbureters, for the purpose of making their action more nearly automatic. The device consists of a cap, containing ports closed by a valve which is lifted by the suction of the engine so that the air supply is proportioned to the speed of the engine. The attachment is slipped over the main air inlet of the carbureter and held by a small set-screw; it is made in sizes to fit standard carbureters.

Three Contact Switch.

A very neat switch shown at this stand consisted of a slate base on which was mounted a pivoted lever swinging in an arc over three contact points, contact being made at the desired point by pressing down the lever, when it engaged after the manner of the familiar jack-knife switch. Points are provided for one battery, two batteries and for both batteries at once, current being cut off when the handle is raised. When leaving the car the handle may be removed entirely by simply drawing it out of its socket. This concern also had on exhibition an auxiliary water tank for use on Oldsmobiles. It is intended to be attached to the car behind the seat and piped into the circulating system to keep the latter full at all times.

An exhibit that was of interest to technical men was found at the stand of the Boston Gear Works, of Boston. Besides a large variety of samples of spur, bevel and other gears and sprockets and chains, a number of specialties were shown, one of which was a light and compact bevel gear differential. In this there were six pinions, and these as well as the gears had planed teeth, the accuracy of the cutting being evident upon a close examination of the gear in motion. A feature of the gear was its extreme lightness for the power it was calculated to transmit; aluminum casings were used, materially lightening the whole.

Boston Power Tire Pump.

Another specialty exhibited here was the Boston power tire pump, an apparatus by which one of the cylinders of the multiple-cylinder gasoline motor may be used as a pump for inflating tires. An ingenious specimen of intermittent gearing was also shown, consisting of a large gear and pinion with worm teeth, the continuous revolving of the gear in one direction causing the pinion to turn half a revolution, stop a moment and turn quarter of a revolution in the opposite direction, stop again and repeat. This was shown as a sample of this type of gearing, of which the Boston company makes a specialty. Chains of all sizes for power transmission, universal joints of both ball and knuckle types, steering gears, steering knuckles, and other automobile parts, made up the rest of the exhibit.

Motor with Directly Opposed Cylinders.

Charles A. Carlson, of 623 Bergen street, Brooklyn, N. Y., who is the designer and builder of a gasoline truck with four-cylinder horizontal motor with opposed cylinders, has adapted his engine to marine work and exhibited one of his new models in the basement of Mechanics' Building. The cylinders of this motor are directly opposed, each connecting rod carrying half the crank-pin brass, which is of extreme length; rings at the ends of the bearings hold them on the pins. All the valve gearing is in plain sight on top of the motor when a light aluminum cover is removed, there being no parts under the motor or in places not readily reached. The valves are removable through openings in the ends of the cylinders; and by removing the top casing and the frame carrying the valve gearing, which comes away altogether, the cranks can be exposed in about five minutes, and in ten minutes the crankshaft can be taken out. The complete motor weighs 350 pounds and develops 30 horsepower at 1,000 revolutions per minute. The builder is at present putting up an eight-cylinder marine motor composed of two of the regular four-cylinder motors coupled together, which will develop about 60 horsepower and weigh about 600 pounds. The omission of one flywheel cuts down the weight considerably in proportion to the power. This motor is to be installed in a racing boat. The four-cylinder motor is 33 3-4 inches from end to end of cylinders, 12 inches deep and 17 inches across the crank-case in the axis of the crankshaft.

A Line of Special Oils.

A concern that makes special oils for different makes of cars is the A. W. Harris Oil Co., of 326 South Water street, Providence, R. I., whose exhibit on the main floor near the entrance was the distributing point for road maps showing graphically the difference between the experiences of a novice using poor oils and those of one who used good lubricants—in other words, Harris oils. The exhibit consisted of samples of the various special oils manufactured by this concern, and oil was "on tap" for examination by those who were sufficiently interested to go deeper into the matter than their eyes would take them. Among the literature distributed at the Harris stand was a little pamphlet containing a number of pointers on the subject of lubrication and explaining that an oil which is excellent for a certain purpose may be unsuited to other uses. Different oils are made for air-cooled and for water-cooled cylinders, for instance; and the steam cylinder oils are different from the oils for gasoline engine cylinders. The Harris Company also manufactures plain greases, graphite greases and polishing compounds.

Special Bronzes and Other Metals.

An attractive exhibit in the basement was that of the Victor Metals Co., of Braintree, Mass., consisting of a great variety of automobile and carriage trimmings, marine hardware, propellers, shafts, railings and many other fixtures that are required to look attractive and at the same time possess strength and resist the action of acid and salt water. Victor silver is of a beautiful silver color, looking when polished as if nickel plated. Its tensile strength is given as 53,250 pounds per square inch, with an elongation of 16 per cent. Victor bronze is a metal for use where greater strength is required, and can be furnished in castings, ingots or rods, the tensile strength of the cast metal being, it is said, 65,000 pounds per square inch, with an elongation of 39 per cent.; and of the rods 77,000 pounds, with an elongation of 29 per cent. The cast metal can be forged, and contains no iron. The Victor Metals Co. also makes a variety of aluminum, phosphor and manganese bronzes and special bearings for many purposes.

Automobile Enamels and Oils.

Enamels and paints for finishing automobiles and painting garages and the like were displayed by the Alden Speare's Sons Co., of 369 Atlantic avenue, Boston, who also showed a large variety of lubricants suitable for use in steam and gasoline automobiles. This concern makes an aluminum enamel which is of interest in view of the extensive use now made of this style of finish. Speare's aluminum enamel is said to be particularly suitable for use on automobiles and motor boats, as, if properly applied, it will not flake or peel off under the action of heat, and will retain its color and brightness indefinitely. Salt water, oil and grease do not affect it. Asbestine, the "cold-water paint," is handled by this company, and is largely used on garages and other buildings; it may be had in a variety of colors, and is mixed with cold water only, notwithstanding which it possesses considerable durability under the action of the weather.

Speare's automobile oils are made for every part of the car, for hot and cold parts and for winter and summer use. One of the specialties is an oil for use with leather-faced clutches, preventing sudden gripping and tending to preserve the leather. The company has an office at 100 William street, New York, and another at 9 Milwaukee avenue, Chicago, in addition to the home office in Boston.

Disengaging Clutch for White Cars.

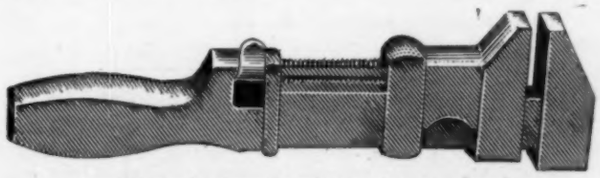
A specialty shown for users of White steam cars was a clutch for cars of the models of 1903 and 1904, for allowing the engine to be run free for warming up and pumping water. The attachment is made by the Constant Dynamo Co., and was exhibited by the Constant Spark Plug Co., of 135 Oliver street, Boston. It consists of a complete driving shaft with one end squared and the other fitted with a yoke for the universal joint; but instead of being solid, the shaft is cut in two and provided with a simple clutch of the claw type, one member of which is immovably fixed on one-half of

the shaft while the other slides on the end of the other half, and is fitted with a collar in which the operating fork fits, and with a spring which keeps the jaws normally in engagement. Strength and simplicity are strong features of the clutch, a number of which are already in use. The device is attached to the car in the same way as the solid shaft, no special fitting being required. Lubrication is provided for, the clutch carrying a supply of oil sufficient for long periods. A pedal on the footboard is depressed to disengage the clutch, when the engine may be run free.

This concern also showed the Constant spark plug, having sparking points in both ends, so that if one end of the plug goes out of commission the plug can be reversed and the opposite end screwed into the cylinder.

Time-Saving Monkey Wrench.

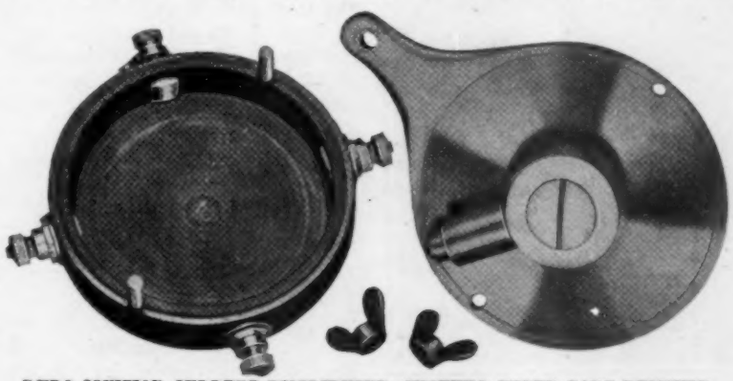
A time-saving monkey wrench was shown by the Bay State Tool Company, of 294 Washington street, Boston. At first glance this resembled the ordinary form of monkey wrench very closely, but investigation showed that the thread of the screw was cut away like the interrupted thread on the breech-block of a modern gun, and by pressing a thumb lever the loose jaw was released from engagement with the screw and could be slid to any desired position and there locked by simply releasing the thumb lever, which returned to its normal position under the pressure of a small spring. The wrench is case-hardened all over, and is evidently meant to withstand hard work without injury.



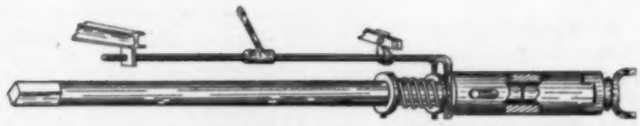
"BAY STATE" QUICK ACTING MONKEY WRENCH.

Duro Ignition Current Distributer.

An automobilist who has had perhaps a little more than his share of the trials and tribulations caused by the eccentricities of ignition current distributers, set himself to the task of devising an instrument that would do the work without getting out of order and destroying the temper of the user. The result, called the Duro timer, was exhibited by the inventor, T. Alton Bemus, of 294 Washington street, Boston, and certainly its simplicity and smoothness of operation, so far as could be judged by an examination of the instrument on the stand, leave little to be desired. The circular base-plate is of aluminum and has a central hub bushed with a bronze bearing through which the shaft passes. A single arm extending at right angles to the shaft and firmly secured to it, carries at its outer extremity a plunger pressed outward by a spring. In the end of the plunger is a steel ball, with about a third of its diameter protruding, free to turn in its socket but unable to fall out. A fiber ring, of the same diameter as the base-plate, to which it is secured by two studs, carries on its inner surface square contact plates of steel connected to the binding posts, which project radially from the periphery of the ring. The arm on the shaft is of such length that the steel ball is pressed against the ring and, as the shaft revolves, the ball, on the end of the arm, travels around and makes contact with each of the plates in turn. The rolling motion of the ball, together with its extreme hardness, prevents its wearing much, while there is sufficient rubbing to keep it clean. The contact points may be of any desired number; the single arm with its ball end is the only moving part. As the wires leading to the plugs are all attached to the binding posts on the fiber ring, they are all removed when the ring is removed. The contact plates are sunk slightly below the surface of the fiber, so that their edges do not wear, and the timing remains the same even after long use. A cover either of fiber or of heavy glass protects the front of the instrument and excludes dust and water, the cover and ring being integral when fiber is used for both.



DURO IGNITION CURRENT DISTRIBUTER, SHOWING UPPER PART REMOVED.



"CONSTANT" RELEASE CLUTCH FOR WHITE STEAM CARS.

Accurate Drop Forgings.

The Page-Storms Drop Forge Co., of Springfield, Mass., had an exhibit of steel forgings that were eye-openers to those who have not been watching the development of this important branch of the metal-working industry. The samples were of a smoothness and accuracy not always seen in such things, and the attendant stated that forgings were commonly made that were within one-sixty-fourth of an inch of finished size. A large number of automobile parts were shown, and also some parts of rifles made for the United States Government. Some of these had been twisted and bent to prove their ductility. A very extensive assortment of spanners was exhibited, both finished and in the rough. This concern furnishes the gear blanks used by the Boston Gear Works, whose exhibit was near by.

BULLARD PIPE WRENCH WITH PIVOTED LOWER JAW.

A Lever-Handled Pipe Wrench.

An exceedingly convenient and efficient tool is the Bullard pipe wrench, manufactured by the Bullard Automatic Wrench Company, of Providence, R. I. In this wrench the pivoted lower jaw is forced toward the solid upper jaw by pressure on the handle, so that the more force applied the more firmly the jaws will grip. The wrench is made of three pieces, all very strong. The handle is of drop-forged steel, and the jaws of tool steel, hardened and tempered.

Key-Seat Broaching Machine.

An exhibit in the basement that was overlooked by many who would have been interested in it was that of the Lapointe Machine Tool Co., of Boston, whose key-seat broaching machine was shown in actual operation cutting keyways and broaching out holes of triangular, square or polygonal shapes. The cutter in this machine consists of a long bar of steel with teeth similar to those of a milling cutter formed on three of its four surfaces. The piece containing the hole which is to be broached or key-seated is placed in a chuck and the cutter-bar is drawn through it by a powerful screw, the cutter-bar being held against the

part to be cut away and fed to any desired depth up to the capacity of the machine. The shapes and sizes of cuts can be varied by using different cutters. The work done by the machine at the show gave an idea of the surprising variety of uses to which it can be put and the smooth, clean work done by the cutters.

This company also showed a fine assortment of adjustable reamers, some being of large size.

STEEL CASTINGS FROM SPECIAL METALS.

Cast steel in many forms was shown by the Massachusetts Steel Casting Co., of Everett, Mass., and illustrated some of the many uses to which this useful metal is now being put. Among the exhibits were a number of cast steel gears, with teeth very close to finished sizes; crankshafts with from one to four throws, and a number of specimens of complicated work for automobile and marine use. The Massachusetts company uses special steels for special purposes, such as nickel steel, manganese steel and carbon steel in various grades to suit the conditions of the duty required.

Italian Numbering Method.

While the subject of the registration and numbering of automobiles is engaging attention because of the various bills pending in state legislatures, the accompanying illustration, from a photograph of an Italian chassis exhibited at the Boston Salon last week, is pertinent as showing the numbering method in vogue in Italy. The word "Torino," preceding the number of the license or registration certificate painted on the gasoline tank hanging from the rear of the frame, indicates that the car was tested out in Turin, the practice in Italy being to place, in conjunction with the number, the name of the city in which a car is owned and used, as in this country the initials of the state where a vehicle is registered precede the license number.

An Italian car so placarded may be driven throughout Continental Europe without the substitution or addition of any other number or tag, the countries having reciprocal regulations by which each recognizes officially the registrations of the others—such reciprocal regulations as it is desired to have put into force by all the states of the Union that have registration laws. The system certainly facilitates touring and greatly simplifies the identification of cars, since it avoids the confusion resulting from the practice of carrying several number tags.

Aside from this feature, the chassis which was exhibited by Hollender & Tangeman, of New York, importers of the F.I.A.T. cars, is of interest, as it is a 1905 model of the 24-horsepower touring car. While bearing a close resemblance to the frame and running gear of the German Mercedes car, the engine differs in many respects from the Unterturckheim Mercedes motor, and Mr. Tangeman is authority for the statement that the popular impression that the F.I.A.T. cars are Italian Mercedes, built under license from German designs, is erroneous. The only part of the Italian cars that is built under the German Daimler patents, he says, is the honeycomb radiator. Formerly this part bore a plate announcing this fact, which doubtless led to the assumption that the entire car was built under the German patents, but now this plate is no longer attached to the front of the radiator.

CHASSIS of 1905 F. I. A. T. 24-H.P. TOURING CAR, SHOWING ITALIAN NUMBERING METHOD.

H. L. JOHNSON AND FRIENDS ENJOYING A SPIN AT ECHO LAKE, LOS ANGELES, IN MID-FEBRUARY IN HIS PIERCE GREAT ARROW.

AUTOMOBILING IN CALIFORNIA.

The accompanying illustration shows L. H. Johnson and friends, of Los Angeles, enjoying a middle-of-February spin in his Pierce touring car at Echo Lake. Mrs. G. A. Bowman is at the wheel. As may readily be observed the climatic conditions then existing in that "land of sunshine" is in marked contrast to that experienced by the automobilists who attended the shows in the Middle West and Eastern states about the same period.

Automobile Rules.

Grab der veel vich is in front of you firmly mit both hands and put one foot on der accelerator. Now put der udder on der rheostat und let der elbow chently touch der deodizer. Keep der blow pipe connecting mit der automatic fog vissle closely between der teeth, und let der right elbow be in touch mit der quadruplex while der apex of der left knee was pressed against der spark coil. Keep both eyes on der road in front of you und der rest of your face in der vaggon. Start der driving veels, repeat slowly der name of your favorite coroner, und leave der rest to fate.—*Whitewater* (Wis.) *Register.*

The autocar and autoboat exhibition of the Swedish Automobile Club, to be held in Stockholm, April 19 to 30, promises to be very interesting. The Crown Prince of Sweden and Norway has accepted the patronage of the show, which ought to be well patronized by the boating world especially, thanks to the splendid facilities Scandinavia can afford for this branch of sport.

Engine Details of New Auto Boats Entered for Monaco (Mediterranean) Races.

By RENÉ M. PETARD.

PARIS, March 8.—The boat races at Monaco which met with so great a success as a society affair, as well as from a technical standpoint, last year, will be run again this year. The small fortunes which are promised as prizes, and the number and importance of the entries already obtained, clearly show that the Monaco boat races are the races of the year, as far as Europe is concerned.

Every one remembers the great boats of last year—*Treflé-à-Quátre, La Rapée, Hotchkiss,* and others. None of these will appear this year, but their places will be taken by greatly improved boats, which, although they are not all known to the public so far, promise to be beautiful craft, judging by such boats as we have been able to see so far.

The firms of Renault and Gobron-Brillié have launched their boats, the hulls of which are exactly similar in every respect, being from the same designer and same hull makers, and having the same general dimensions, with a length of 26 feet. The Renault is of more pleasing appearance, with her smooth deck, than the Gobron, with her four protruding exhaust pipes. The Renault boat will be called *Billancourt,* after the town where the Renault works are located, while the Gobron will carry the maker's name, *Gobron.*

In these boats the steering is by inclined wheel of the automobile type, with steering gear following also general car practice; this seems to be one of the tendencies of the year, as M. Brasier, of Gordon Bennett and *Treflé-à-Quátre* fame, will also put in this year's boat the exact steering arrangements of his cars. Emergency steering apparatus is fitted in the *Billancourt* and the *Gobron* in the form of a horizontal bar with pull ropes at the ends fastened on the rudder stock as is current practice in row boats.

Engine of the "Billancourt."

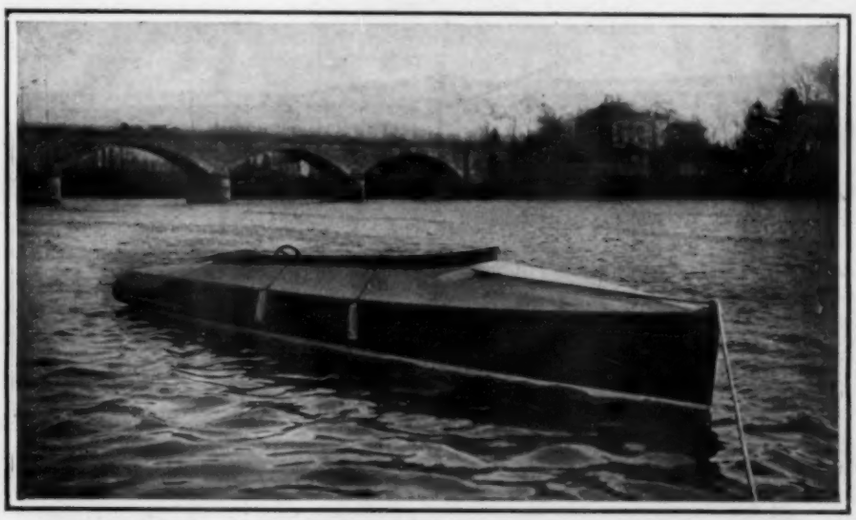
The engines of the *Billancourt* consist of four cylinders cast in pairs, with common exhaust chamber for the valves of each pair, and separate inlet chambers on each side of the exhaust chambers. The valves are all on one side of the engine, over a single cam-shaft, variable inlet lift being provided. Ignition is by a high-tension magneto current direct to the plugs. Water circulation is by pump, which is a unique circumstance in the history of Renaults, thermo-syphon having always been used on their cars. The crankcase is of aluminum, and, save the arms, is the reproduction of the car engine crankcase. The same may be said of the clutch. The engine cannot be regulated by the helmsman, a special engineer being required. The starting of the engine is by a long shaft running from front to rear, alongside the engine, which can plainly be seen in the photograph. The forward end of this shaft carries a chain and pinion driving the crankshaft through a second pinion. The crankshaft is of the four-throw, three-bearing type, and is of a special grade of nickel steel, extremely light for the 80 normal horsepower of the engine. The exhaust is carried directly into the air from the two exhaust chambers, through the upstanding curved pipes shown.

Gordon Bennett Engine in "Gobron."

In the Gobron boat is used the engine which proved so powerful and capable of such high speeds in last year's Gordon Bennett eliminatory trials. It is of the well-known four-cylinder, eight-piston type, with cylinders cast in pairs. This engine, although smaller in bore than the Renault, develops 100 horsepower; this on account of its longer total stroke and greater speed. The ignition is by jump spark from magneto. Three of the four exhaust pipes are seen protruding at the side of the boat, the fourth not being in place, as indicated by the hole shown in the side of the hull. The helmsman can attend to the engine in case of emergency. The water outlet pipes are seen following closely the sides of the boat to enter the water outside. The carbureter of the Gobron engine, as well as that of the Renault, is fed under pressure from the exhaust, a hand pump being fitted on the side for starting, as plainly shown in both pictures. The starting apparatus of the Gobron is also a longitudinal shaft, but this shaft drives through a pair of spur gears instead of through a chain.

Besides these conventional boats, as we might call them, a very interesting experiment is shown by the makers of the Delahaye cars, Messrs. Desmarais & Morane. The engine cylinders have a bore of 300 millimeters (12 inches) and stroke of 220 millimeters (8 3-4 inches), the motor developing 300 horsepower at 700 revolutions per minute, and weighing 2,500 pounds. The four cylinders are bored out of nickel gun steel, are made very thin, and are surrounded for about twice the length of the stroke by spun copper jackets which are pinched and used as gaskets between the tops of the cylinders and the cylinder heads, the lower parts being squeezed into grooves to form a tight joint by flexible steel bands shrunk by a screw and nuts, as shown plainly in the photograph. Cast iron is not used in any of the parts of this engine except the flywheel.

The "crankcase" is only a crank frame. It consists of five suitably shaped steel castings, very light, but thoroughly well ribbed and netted. These castings are bolted together so as to form a bench carrying the cylinders, one over each joint, while the body of each casting is used to form the lower member of the five engine bearings. The five castings, besides being bolted together, have their projecting arms bolted on two T-shaped angle steel members which will be laid on the boat bearers, these angle steel members being united by two similar cross-ties, front and rear of the engine.

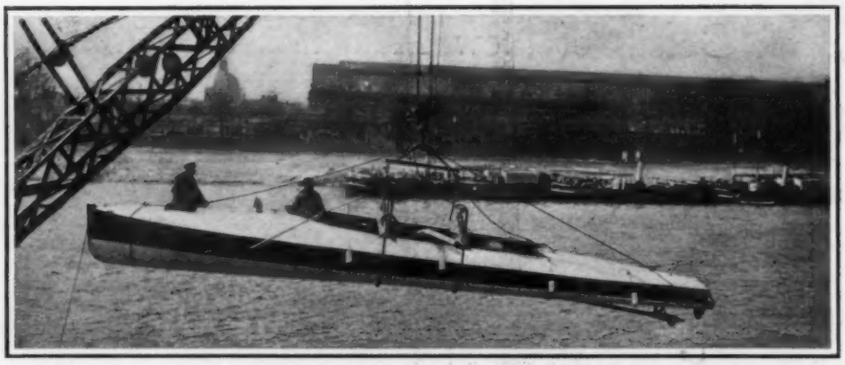


RENAULT 8-METER RACER "BILLANCOURT," FITTED WITH 80-H.P. RENAULT ENGINE.

The cylinder heads are also very light and made of cast steel. They carry each six valves—three inlet and three exhaust—as well as the elbows containing the said valves and the bearings of the two cam-shafts which run lengthwise on top of the cylinders. These cam-shafts are driven by a vertical tubular shaft, which drives a combination of a bevel and a spur gear, the latter driving in turn the two parallel cam-shafts. The tops of the cylinder heads present two large openings into which fit the elbows connecting them to the piping. Each elbow contains a nest of three large valves, with outside springs. These valves are operated from the cam-shafts through bell-crank levers.

The ignition is double, from high-tension magneto and the usual coil and battery jump-spark system, but it is claimed that, contrary to what was expected, either of the means of ignition is sufficient to run the engine at its highest speed—at least apparently, since this highest speed has not yet been attained by the testers on account of the primitive means adopted for holding the engine down. The expectations were that to ignite in a sufficiently short time such a large charge as the engine takes it would be necessary to ignite it in at least two separate points, but the experiment has proved the contrary, probably on account of the perfectly cylindrical shape of the combustion chamber, which is absolutely free from any corners, side pockets, etc., all of which impede the rush of the explosion. It is feared, however, that for these same reasons the engine will prove extremely brutal. This, however, is of less importance in a boat than on a car, the element used as a resistance being ideally resilient. In the foreground of the photograph should be noted the two pumps; the lower one, only partially seen, is the water circulation pump of the centrifugal type, while the one immediately above, of the gear type, is the oil pump which constantly throws a spray of oil over the working parts of the engine.

The crankshaft is hollow and is made of the strongest steel yet produced suitable for this type of part, and is comparatively of an extreme lightness. It cost alone 1,500 francs ($300). An idea of the size of this crankshaft can be gained from the view of part of a spare one, partly hidden by the black veil used in taking the photo, but which can, however, be perceived between the small 16-horsepower engine and the large one standing on the floor. The connecting rods, also built up of nickel-chrome steel, are hollow and very stiff and light. The clutch is contained in the boss of the flywheel and is of the Mercedes type, being a spring steel spiral wound around a drum. The reverse is of the planetary system, without internal gears, giving a speed reduction of one-third when reversed, and able to free the propeller independently of the clutch.



PANHARD 12-METER RACER "PALAISATO I," FITTED WITH 150-H.P. SIX-CYLINDER ENGINE.
Entered for Monaco Races, to be Piloted by H. Farman.

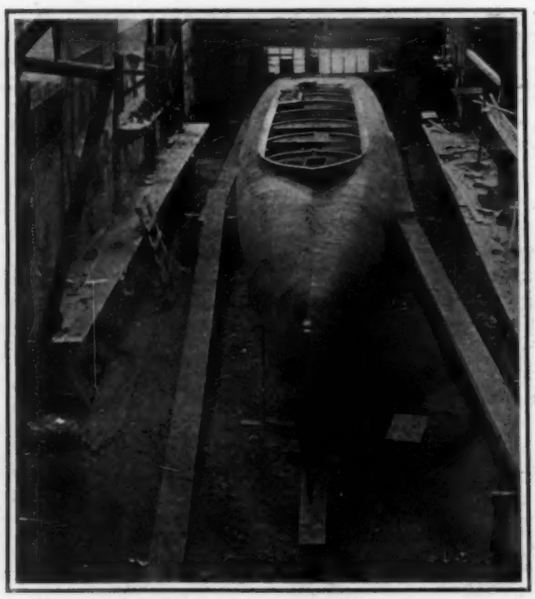
The raw material alone for the four cylinders cost 2,800 francs ($560), while the boring, facing and turning with fitting of the same four cylinders came to 2,500 francs ($500). It does not appear to have been mere child's play!

Two engines of this type will be entered in the Monaco races. One of them was ordered by Mr. Dubonnet, a wealthy tonic wines maker, for his 50-footer *The Dubonnet,* which is expected to be one of the fastest boats afloat. The hull will be made by Messrs. Tellier & Gerard, who acquired their fame in making all the Panhard boats. The second engine will be used on a boat of the same length but having different lines, built by Seyler, the makers of the hull of *Treflé-à-Quâtre,* and many other famous boats.

HOTCHKISS HIGH-POWERED BOAT.

The Hotchkiss people are also preparing a huge brute. It will be an eight-meter boat (26 feet 8 inches), and will carry an engine of well over 200 horsepower, the sizes of which are, however, not available at present. It will have mechanical valves on one side of the cylinder, following the usual Hotchkiss practice, with magneto make-and-break ignition, and evidently, ball bearings all over. Whether it is even theoretically admissible that a 26-foot boat can profitably use more than 200 horsepower and give a speed in proportion, we shall not attempt to discuss. It will, at any rate, prove a very interesting experiment. Le Blon is expected to be in charge of the boat.

Coming back to more gentle sizes, we find the *Riri,* made by the Delaunay-Belleville people which is a jewel of mechanics. The engine is a 30-horsepower nominal, of the Delauney-Belleville car type, with symmetrically placed mechanically operated valves, high tension ignition, eccentric pump pressure oil feed to every part of the engine, cone clutch and car type change-speed gear and reverse by sliding gears, with direct drive on top speed, and exhaust pressure gasoline feed to automatic carbureter. This boat, although not a marvel of speed, is very light on the water and has proved extremely reliable, the object being rather very fast cruising than racing proper. It is likely that regular orders from owners will be taken for this type of boat, just as they were taken for touring cars.



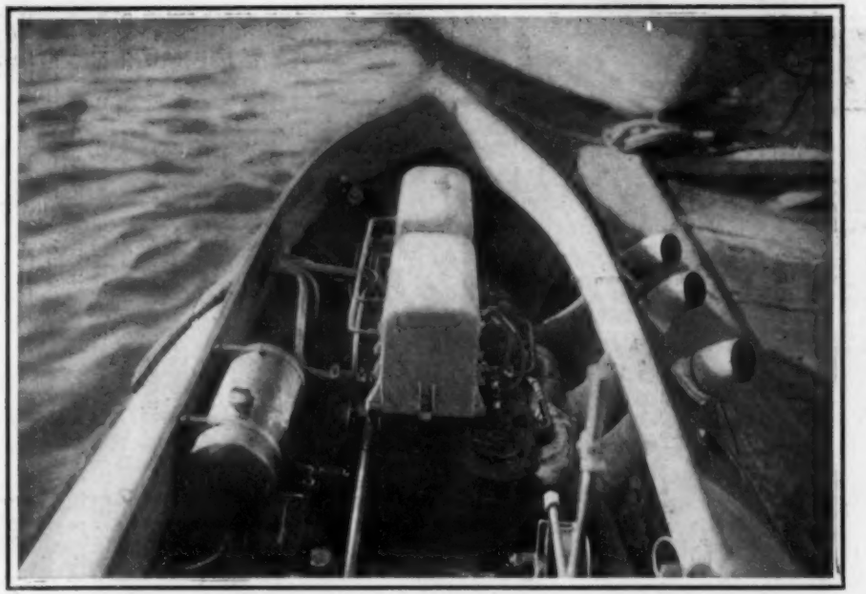
DELAHAYE 15-METER BOAT "TRIDENT," 300 HORSEPOWER.

Notes from London.

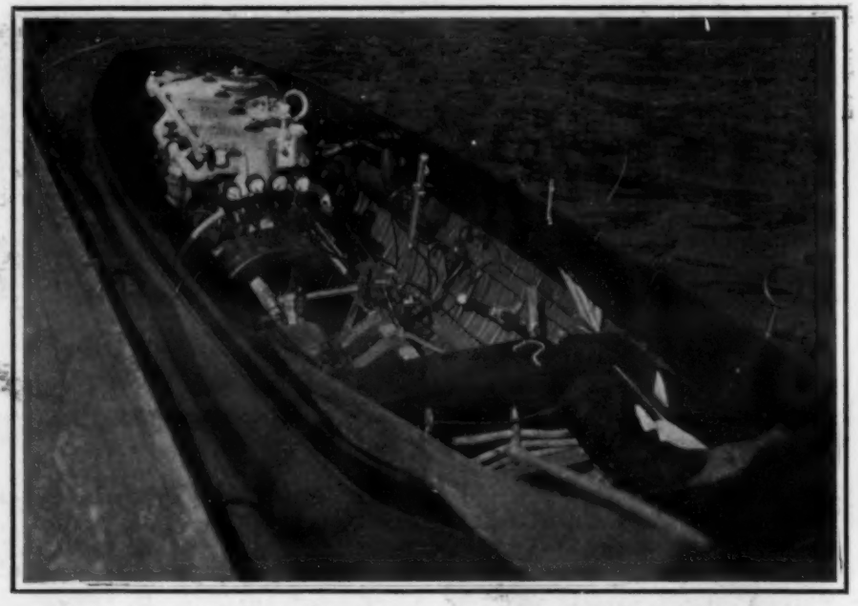
Special Correspondence.

LONDON, March 11.—A most disastrous fire broke out in Long Acre, London, on February 22. Long Acre is the center of the motor district in London, and four automobile firms had their premises burned to the ground. The Ariel Company lost no less than twenty-six cars, valued at £25,000, while H. Du Cros, Ltd., had several Mercedes cars burned, including one of the new 70-horsepower models. The fire has been ascribed, wrongly in all probability, to the presence of gasoline, and some sensational stories have appeared in the English "yellow press" concerning the danger attached to the use of this "terrible liquid."

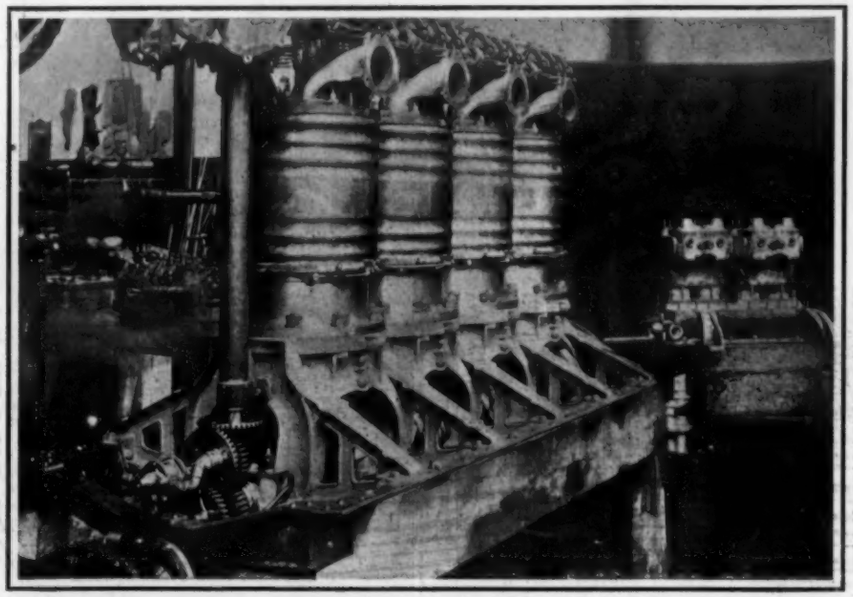
Classes in automobile instruction have been held at Eastney Barracks, Portsmouth, for the benefit of the Royal Artillery Marines stationed there, who have been taught by the Granada Motor Works, Southsea. Several ladies and gentlemen, the latter mostly naval officers interested in this work, lent their cars for purposes of demonstration, while the Automobile Club's technical committee held an examination at Portsmouth last week and granted certificates to the successful candidates, who underwent a thorough test, both written and oral. The thorough training the marines have had both with the guns, which has given them a good insight into mechanism, and the level-headedness and sharp outlook necessary to make a good sailor, makes them chauffeurs of a class that is badly needed—efficient, reliable and clear-brained. Both the club and the technical committee at



Gobron-Brillié 100-H.P. Engine in Auto Boat "Gobron."—Note Protruding Exhaust Pipes.



Interior of "Riri II," Showing Delaunay-Belleville 30-H.P. Engine.—Entered for Monaco Mile Cup.



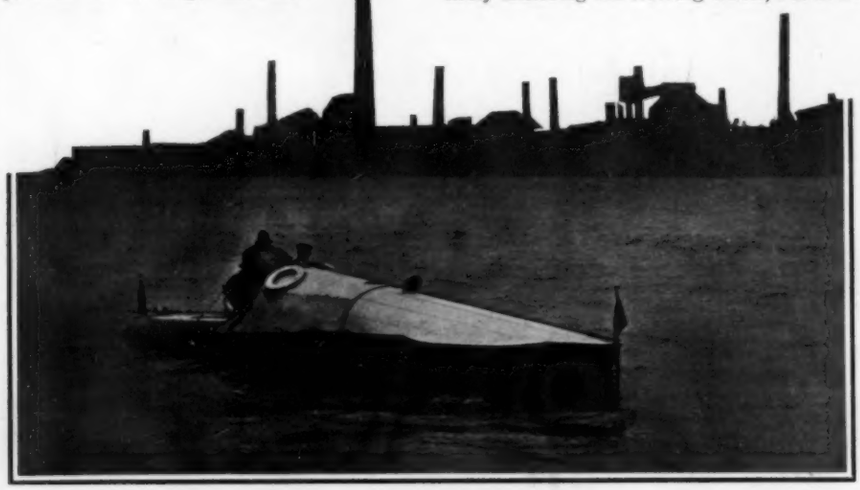
Delahaye 300-H.P. Engine for 50-foot Hull.—Note 16-H.P. Automobile Engine at Right.

Renault 80-H.P. Motor in 26-foot "Billancourt."—Note Upstanding Beveled Exhaust Pipes.

SPECIAL ENGINES FITTED TO THE 1905 FRENCH AUTO BOATS ENTERED FOR THE MEDITERRANEAN RACES AT MONACO, APRIL 2 TO 16.

Portsmouth are trying to obtain positions for the men in private and public services, and this example cannot be too widely imitated, for the question of what to do with our soldiers and sailors on leaving service is one of the burning questions of the day.

The new *Napier II.*, which has been built by S. F. Edge, Ltd., to run in the coming Monaco autoboat races, was successful in breaking the record on a trial trip last week. Several runs were made on the Thames over a measured nautical mile, the recorded times being 2m. 24s., 2m. 14s., and 2m. 12 3-5s. This last time made with a strong cross wind blowing, is equivalent to a speed of 31.1 miles an hour. The boat is 40 feet in length and is fitted with a 100-horsepower Napier marine motor. It is confidently expected over here that the *Napier II.* will sweep the board at Monaco. At present S. F. Edge has the great distinction of having the English records both on land and on sea held by his productions.



TESTING "NAPIER II" IN THAMES RIVER.—BEST EUROPEAN TIME FOR MILE, 2 : 12 3-5.

Besides the three Napier boats entered for the British International Cup at Arcachon on September 11, a Hutton boat will also take up the running, England being therefore well represented. With the exception of William Wallace's American entry, which has been promised, no other nationality seems to be forthcoming. Of the three Napiers, two have been entered by S. F. Edge and the third by the Hon. John Scott Montagu and Lionel de Rothschild, who is also having a Siddeley racer built for the Gordon Bennett event.

Clarence Gray Dinsmore, representative of the A. C. of America in Europe, has bought Jenatzy's Gordon Bennett Mercedes 90-horsepower racer, which he intends to enter for the Semmering Hill Climb, promoted annually by the Austrian A. C., and which he won two years in succession. Last year Director Willy Poege steered Mr. Dinsmore's Mercedes without success; this time, rumor has it, that Janatzy will drive his own car.

Protectors for the Hands.

Special Correspondence.

PARIS, March 10.—The proposition of Prince Pierre d'Arenberg to organize a competition for appliances to protect chauffeurs' hands in cold weather has met with great success. Although only the modest sum of $100 was handed over to the technical committee of the Automobile Club of France as prizes for the best device, no less than 133 schemes were presented for examination. This, however, is not to be wondered at, for although no satisfactory method existed of keeping the hands warm when driving an open car in cold weather other of course than glass screens, the matter must often have been turned over in the minds of many a would-be inventor.

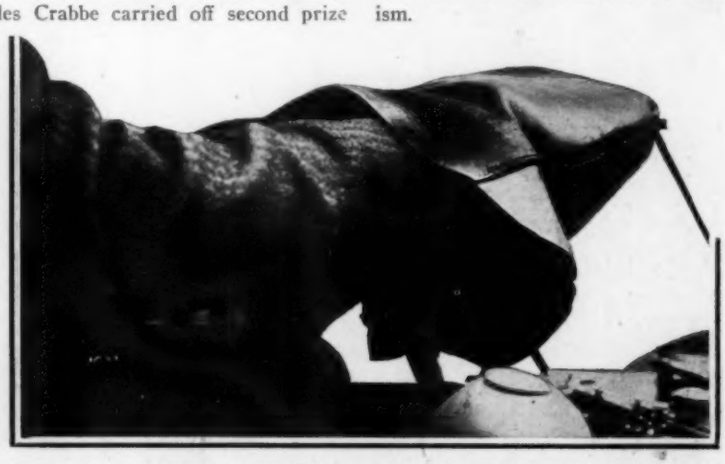
The technical committee awarded the first prize to Paul Meyan for a leather shield entirely enclosing the steering wheel, but in no way attached to it. The protector is roughly of the shape of a seaman's helmet, and perfectly protects the hands without at all preventing free movement; it can very readily be taken off or attached. If necessary, the metal frame of the shield can be made of tubes to be heated with hot water.

Charles Crabbe carried off second prize for gloves made of untearable paper, or of skin lined with paper, having distinct heat-retaining qualities.

The third scheme was the invention of Messrs. Eugene Devers and Albert Nazy, and consisted of an apparatus taking hot air from behind the radiator and circulating it around the wheel under a movable shield.

Honorable mention was also given to two other devices, one of which was a steering wheel heated by hot air from a fire of small coal bricks commonly in use in Paris; and another a well thought out scheme of hot water circulation in the wheel.

A number of schemes were presented for the warming of the hands by means of hot air, one of them being the invention of a woman, but it was rather in the working out of the plans than in their originality that most of them fell short.



HAND PROTECTOR FOR CHAUFFEURS, AWARDED FIRST PRIZE BY TECHNICAL COMMITTEE OF AUTOMOBILE CLUB OF FRANCE.

TROPHY OFFERED BY PRINCE OF MONACO FOR 1905 RACE.

Emperor William II. paid a visit to Niederschoenweide, near Berlin, last week, where he and his suite spent nearly two hours inspecting the works of the Neue Automobil Gesellschaft, where the N.A.G. cars are produced. His Majesty put a series of pertinent questions to his guides, thereby disclosing a surprising technical knowledge. The interest evinced by the monarch augurs well for the future of German automobilism.

GORDON BENNETT RACE UPPERMOST.

Directors of French Club Sue Paris Journals for Harsh Comment — President Loubet and Minister of Interior Likely to Attend Cup Race—Brasier Cars Already Finished.

Special Correspondence.

PARIS, March 7.—A rather unexpected outcome of the decision of the Automobile Club of France to accord its official patronage to none but its own annual road race is an action for libel against an important Paris daily paper. It will be remembered that *Le Journal* and its recent sporting offshoot, *Les Sports*, intended to organize a big race on the Aix-les-Bains circuit, and endow it, with the aid of the municipality of the town, with a $30,000 prize. The prospect of its race being forbidden owing to the recommendation of the Automobile Club did not at all please the papers in question, and a fierce attack was directed against the club and a rival organ subsidized by the latter. Baron de Zuylen, president of the club; Marquis de Dion, M. de Chasseloup-Laubat and M. Georges Rives, members of the administrative council, were especially singled out, and as an outcome of the attack the three last-named gentlemen will bring an action against the journals, each claiming $20,000 as damages and an apology in the newspapers. The general committee of the club has passed a vote of confidence in its president and the members of the council, and has decided to break off all official connection with the two journals.

PRESIDENT MAY ATTEND GORDON BENNETT.

Yesterday a deputation from the Automobile Club visited the Elysée to request President Loubet to honor with his presence the Gordon Bennett race next July. The President expressed his deep interest in the automobile industry, and asked to be informed of the exact date of the race. Until this is known, it will be impossible for him to say whether affairs of state will permit him to visit Auvergne on the occasion of the great race.

Later in the day the deputation waited upon the Minister of the Interior, who declared that it would give him the greatest pleasure to be present at the race, and charged the deputation to offer his felicitations to the Automobile Club of France for its devotion and zeal in defending the interests of the country and of the working classes.

Last night the principal French constructors dined together and afterwards talked over the racing situation. The result, if any has been arrived at, has been kept an absolute secret. A large number of guards kept watch at the doors of the dining room, and no communication whatever was made to the press. It is not thought that any other constructors will join Mors and De Dietrich in their protest, and the probability is that all the Gorden Bennett entries will be again made before April 1, with the exception of these two firms.

PARTICULARS OF DARRACQ RACERS.

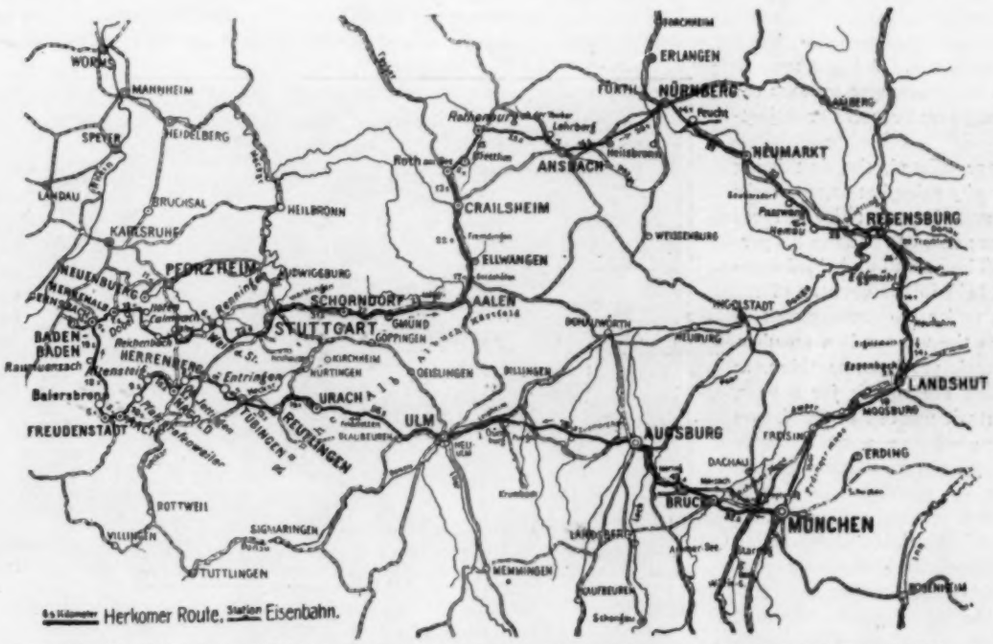
The three Richard-Brasier cars are quite ready and may be expected to leave Paris shortly for the Riviera in charge of Messrs. Brasier, Théry and Caillois. The three sportsmen will be present at the Monaco meeting, and during the tour will have opportunities of testing their cars and bringing them up to racing pitch. Details of cars under construction are most jealously guarded, but some particulars have been obtained regarding the Darracq vehicles. They will have four cylinders of 140 mm. bore and 160 mm. stroke, developing 85-horsepower; the sparking will be by magnetos, and the transmission by cardan shaft. The change-speed gear and the differential will be contained in the same case; the wheel base will be 2 meters 30 centimeters (90 1-2 inches) and the total weight 750 kilos (1,653 1-2 pounds).

Herkomer Week Program.

Map, program and rules for the Herkomer competition arranged by the Bavarian Automobile Club in coöperation with the German Automobile Club, to be run in South Germany from August 10 to 16 inclusive, have been received from the Bavarian Club. The map is reproduced herewith.

The competition is an international affair open to all kinds of automobiles built and equipped solely for touring, and is divided into three parts: 1. Competition in beauty and practical utility of coachwork, one day; 2, Speed trials, two days, (a) Kesselberg hill climb, seven kilometers, (b) Trials in Forstenrieder Park, six kilometers out and back from Munich; 3, Touring trial through South Germany, 900 to 1,000 kilometers (558 to 620 miles), from Munich (Munchen) to Baden-Baden, Nuremberg (Neunenburg), and back to Munich, occupying three days.

Each car must have seating accommodations with backs for at least four persons and be provided with bonnet over the motor, front and rear mud guards, three lamps, one fastened at the rear; must have reverse, two brakes, a safety device for hill climbing, a signal horn and muffler, weight and horsepower are unlimited. Competing cars must use the same bodywork in all speed and



GERMAN MAP OF COURSE FOR INTERNATIONAL TOURING CAR CONTEST FOR HERKOMER TROPHY.

touring tests, but may show two types, as coupé and phaeton, in the exhibition on the first day. Unless at least fifty cars are entered by May 31, 1905, the competition will not be held.

Awards in the exhibition will be made on such points as practical utility of the carriage work, exterior, painting, springs, steering, protection against rain, wind and dust; space for luggage, repair parts, tools, and other accessories; accessibility and graceful construction of the machine.

In the speed trials and hill-climbing contest, the hood, lamps, luggage case and other accessories may be removed, but each car must carry two passengers and be steered by the same driver in the hill climb as in the park trials. The cars will be started in groups as follows: I, Cars of more than 60 horsepower; II, Up to 60 horsepower; III, Up to 32 horsepower; IV, Up to 16 horsepower.

The touring contest is mainly for reliability, a minimum and maximum time being fixed for each day's run. An observer or "controller" will be a passenger on each car to note all stoppages and repairs or adjustments.

Seven prizes are offered, the first being the Herkomer trophy valued at 10,000 marks ($2,000), which must be won twice in three years by the same person to become his personal property. The second and third competitions will be held in the country of the previous winner, under the management of the club of which the winner is a member. The winner of each year's competition, in addition to holding the trophy for a year, will have his portrait painted by Prof. von Herkomer (value of the portrait about 10,000 marks). The ten cars finishing with the least number of discredit marks will each receive a silver medal.

The German Automobile Club, acting jointly with the Bavarian club, has organized the Bleichröder races to be held August 12 and 13, the first day being devoted to speed trials up Kesselberg hill (seven kilometers), and the second day to a six-kilometer race in the Forstenrieder Park. These races are open to all countries. Competing cars are limited in weight to 1,000 kilograms (2,204 pounds), or if equipped with magneto ignition, to 1,007 kilos. Each car must carry two persons and have two brakes, reverse gear and exhaust tube. Contestants will be started singly. First prize is $2,000 in cash and second prize $500 in cash. Entries close July 31, 1905.

Members of foreign clubs wishing to compete in any of the foregoing events, should send their entries through their own clubs to the German Automobile Club, Leipziger Platz, Berlin, or the Bavarian Automobile Club, Schommerstrasse 21, Munich, Germany.

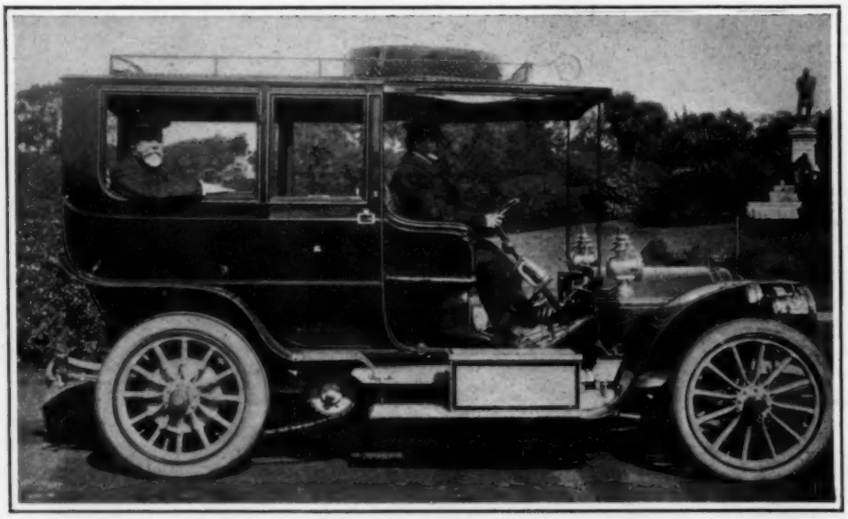
An English contemporary states that a gasoline motor which showed a compression of 90 pounds at the sea level, showed only 84 pounds on the highest road in England. The height is not mentioned.

Californian's Special Car.

Special Correspondence.

SAN FRANCISCO, March 12.—M. Theo. Kearney, a prominent and wealthy raisin producer of Fresno, California, has brought here from Europe a new limousine body Mercedes, which is in some respects unique in the line of touring cars. The body is after Mr. Kearney's own design, and is built by the Hoopers, of London, who are coach builders to the royal family. Mr. Kearney desired to secure a covered car in which the windows could be lowered entirely out of sight in the body of the car, after the manner of windows of hacks or broughams, but was told by the French body builders that this could not be done. This point, however, has been successfully effected by the English builders, by sacrificing the bulging overhang usual in automobile bodies.

The commendable feature of the Kearney design is the possibility of keeping the glass windows safely encased in the frame of the car in country touring, where an accident would be accompanied by great danger to the occupants from broken glass. The windows can be raised with safety in the slower going on city streets; and shutters, also dropped within the frame, have been provided against rain or obectionable dust in the country. In the ordinary type of limousine body the windows are either half lowered or are swung to the roof inside the car.



M. T. KEARNEY, OF FRESNO, CAL., IN HIS SPECIAL LIMOUSINE MERCEDES CAR, SHOWING SIDE WINDOWS LOWERED OUT OF SIGHT.

Mr. Kearney has also secured window openings of unusual width, making practically an open car when the windows are lowered. The car has very graceful lines, due to its long and narrow body. There are seats inside for four persons, all facing forward. The two in front can be folded beneath the rear seats when desired. The car is fitted with electric lights inside the body, and has an electric indicator on the dashboard by which the driver can be instructed from the interior of the car as desired. It is also fitted with a speedometer and timepiece inside the limousine, pockets for maps, etc. The car cost a little more than $10,000 in Europe.

The chassis, being a 1904 Mercedes, has unusually long springs, which make for easy riding, but in addition to this the Truffault shock absorbers have been added. The function of this device is to resist and reduce the rebound of the body of the car when the wheels pass over an obstruction or rough piece of road. Another novelty that has been fitted to this car, and one that will soon attract attention, is the new ignition system that has been in use for some months in England on A. L. Guinness' 90-horsepower Darracq and Mr. C. Cordingley's 60-horsepower Mercedes. It is a combination of the jump spark or high tension ignition with coil and accumulators, and the low tension of the magneto. Its great merit is that it produces a series of sparks that is practically a continuous flame which greatly increases combustion, thus reducing the quantity of fuel consumed as well as increases the power. The tires are Michelin, the rear ones having the Samson non-skid covers.

Of the minor features of this car may be mentioned the luggage rail which runs the full length of the top so that the weight of the extra tires and large suit-cases carried when touring may be evenly distributed and not centered over the rear wheels. Of the two headlights, one has a powerful lens to project the light a long distance up the road, and the other is designed to light up the road near the car.

The chassis is painted a warm cream color with black stripes, and the whole body of the car to the roof is a rich blue, with the panels and windows outlined in black stripes and light blue stripes laid on top of these. The result of all is a very neat and artistic car, of graceful lines, that is much admired by those who have seen it.

Bay State Association.

Boston automobilists, both in the trade and out of it, have long felt that an automobile club, to accomplish the most good, should have the hearty support of the trade as well as of users of automobiles not connected with the industry; should possess an atmosphere of informality and comfort attractive to the members and calculated to bring them together; that it should have a large membership with as little "dead wood" as possible, and that it should be such an organization inexpensive to maintain.

Three months ago this feeling crystallized, and the Bay State Automobile Association was formed, an independent organization pledged only to the furtherance of the industry and the sport, and ready to co-operate heartily with all other organizations having similar aims. The association has now over 200 members, all active and interested, and the number is increasing almost daily; it is comfortably housed in attractive quarters, and is formulating plans for an extensive campaign of good work in the cause of automobiling.

READING ROOM OF BAY STATE AUTOMOBILE ASSOCIATION IN LENOX HOTEL, BOSTON.

The officers are: Lewis R. Speare, president; Fred Tudor, Jr., vice-president; H. L. Bowden, treasurer, and J. C. Kerrison, secretary. The Board of Directors includes the officers and W. W. Burke, J. H. Macalman, Harry Fosdick, E. A. Gilmore and George R. Alley. Quarters are rented in the Hotel Lenox, a fine hostelry situated in the heart of the automobile district in the Back Bay section, only a few blocks from a number of garages and the establishments of many automobile dealers who, as in other cities, have a strong tendency to keep close together. The quarters consist of a suite of rooms where members can, and do, drop in and make themselves at home, enjoying the comforts afforded.

One of the most enjoyable as well as beneficial institutions is the lunch room. This seems to be a particularly happy arrangement, for while the association is not under the expense and trouble of maintaining a culinary department, it can offer its members all the advantages of a first-class cuisine. The association lunch room is, in fact, a sort of private auxiliary to the hotel dining room, and club members can be served at the regular hotel rates in the club dining room. That this arrangement is a popular one is evident from the frequency and regularity with which members drop in at noon. There is no stiffness or formality about these luncheons, for there is something about the place apparently, that is conducive to free speech and good fellowship. Manufacturers and dealers meet and discuss matters connected with the industry, and there is frequently an exchange of ideas that cannot but be beneficial to all concerned; and an occasional spirited encounter of wits adds a spice which is never made too hot by overstepping the bounds of good humor. The lunch room was especially popular during the Boston automobile show, when the privileges of the association, which were freely extended to visiting automobilists, were taken advantage of by many from out of town, and the lunch room overflowed into the adjoining reading room, which was pressed into the service.

In addition to the lunch and reading rooms there is a reception room, and when more space is required, as for an evening entertainment or the like, another large room opening off the reception room is available. Thus special occasions are provided for, the club quarters expanding and contracting, so to speak, according to the requirements.

One of the occasions when the capacity of the rooms was taxed to the utmost was at the "house warming" on March 9, when the rooms were formally opened, though they had been in actual use for some time. The major part of the evening was devoted to an address by Francis Hurtubis, Jr., a prominent Boston lawyer who is the legal representative of the association. The subject was "The Legal Status of the Motorist in New England," a subject in which the members of the association are particularly interested. As soon as the membership warrants, active steps will be taken to assist in securing legislation fair to all users of the roads, this being considered one of the most important of the organization's missions. The rapid rate at which the association is growing encourages the belief that it will be strong enough to make itself felt within a short time.

President Lewis R. Speare is enthusiastic over its prospects and possibilities. "The idea has somehow got abroad," he said, "that this is merely a lunch club for automobilists, and particularly for members of the trade. This is about as far from the truth as possible, for the fact is that the members are so much interested in the association that they take great pleasure in coming together and discussing matters pertaining to the automobile, and lunch time is a natural and convenient hour. A vast amount of good is done by the open discussion of questions that might, if not ventilated, lead to misunderstandings. While trade rivalry is by no means forgotten, it is discussed without bitterness.

"We intend to go into the racing field with vigor, and feel sure that, with the owners of many of the fastest racing cars in America on our books, we can be assured of the success of any race meets we may promote."

Export and import trade in automobiles, motorcycles and parts, in Belgium, for the past three years, is tabulated in a report made by U. S. Consul James C. McNally, of Liège, which shows that the grand totals last year were nearly double those in 1902. Although Belgium is a large manufacturer of automobiles, the report shows that the imports of complete machines have enormously increased in the past three years, while the exports have increased a comparatively small amount. The imports of complete cars for the past three years were in value as follows: 1902, $80,193; 1903, $83,812; 1904, $132,335. Totals for exports of complete cars are as follows: 1902, $220,236; 1903, $234,500; 1904, $280,352. For automobiles, motor cycles and parts, the excess of exports over imports for the same periods were: 1902, $404,678; 1903, $857,522; 1904, $770,858, a rather respectable series of figures for an infant industry.

Correspondence

Low Repair Record Criticised.

Editor THE AUTOMOBILE:—

[166].—I note in the issue of THE AUTOMOBILE under date of February 25 (in fact I note everything in every issue from cover to cover), an article from William Myers under the heading "Correspondence." Its contents nearly caused me to faint away from astonishment. I read it over six times, and after every reading I laughed the harder—it seemed so funny! I am the owner of an auto of medium weight, but no such success has crowned my constant and careful efforts.

The experience of the gentleman reads like a fairy-tale. In fact, it savors strongly of the Adventures of Baron Munchausen. The nearest approach to the tale that I recall occurred when I was a prospective buyer; in reply to a question as to probable expense for repairs, breakdowns, etc., the agent said: "I sold a machine to a gentleman who knew nothing about an automobile, had never even ridden in one; he bought and paid for the machine and ran it every day for three months before he even knew that there was a repair kit under the seat!"

I shortly ordered a machine, but not of that agent, for to me part of the pleasure of autoing consists in making occasional repairs on the road.

It looks as though our friend Myers had lost a great deal of true auto sport, as he has not paid out, in six months, but seventy-five cents for repairs, and only had *one* (very small?) puncture; and that puncture was repaired in twenty minutes. In fact, he says, "perhaps," so that it is possibly safe to think that the repair was made in less time.

The article states that he made daily from twenty to one hunderd miles through snow and mud! The average run of one hundred miles on good roads is six hours, and this time would naturally be taken from the best part of the salesman's working hours; that would leave him little time to do business, but as he says his business has been doubled since traveling by auto, he must either be working overtime or is a winner of orders on sight.

I have always thought that a four-inch clincher tire was no easy task to get off and on, but here is a man that can do it in true magician's style. From twenty to one hundred miles per day would be an average of sixty miles per day, or for six months, 10,800 miles. This amount of mileage for a repair bill of seventy-five cents and one puncture is the more remarkable considering that the average life of a set of tires is 4,000 miles.

If I were to repair only one puncture in six months, my hand would be out of practice, and, instead of making a repair in twenty minutes, I would want at least one and one-half hours. It seems to me that such brilliant records as this are better unpublished, as it is a difficult matter to impress any one possessed of a slight knowledge of the workings of an auto with the possibility of "pipe dreams" like unto this being realized.

GEORGE M. ADKINS.

New Haven, Conn.

One of the useful purposes which it is desired that the Correspondence Department, as conducted in THE AUTOMOBILE, shall fulfill is that of stimulating the recounting of owners' experiences with their cars and the arousing of discussion between readers. The more practical and helpful the nature of the letters published the more valuable will the department be to the readers. It is regretted, therefore, that Mr. Adkins, instead of attempting merely to ridicule a statement by another because it was at variance with his own experience or of the experiences related to him by others, did not see fit to give a useful summary of his own troubles that would help others to avoid some of them.

Because one man with one car fails to get certain pleasing results, it does not follow that another person with a different machine cannot possibly get vastly better results. If our correspondent will take the trouble to re-read the letter from Mr. Myers, he will perhaps note that Mr. Myers stated that he used his car "almost every day, * * * making runs of from twenty to one hundred miles in a day, and experienced no trouble at all except one puncture, which delayed me perhaps twenty minutes." He did not say that he drove every day or that he averaged from twenty to one hundred miles, neither did he say the tires were "clinchers" nor that he repaired the puncture himself. If he had no mechanical troubles, it is not beyond reason that his expense for repairs should be practically nil. We know personally of a man who drove a F.I.A.T. car for six months with a total expense for repairs of only 25 cents. Though such cases are most unusual, we find nothing in our correspondent's criticism to indicate that Mr. Myers' experience was impossible.

In our December 24 issue is recounted the experience of Dr. I. L. Fetterhoff with a Knox car, which he drove more than 15,000 miles in fifteen months at a total maintenance cost of $412, including gasoline, oil, tires and repairs of all kinds. At twenty miles to a gallon of fuel, this would represent 750 gallons of gasoline, amounting, at 20 cents a gallon, to $150. And if a set of tires is good for only 4,000 miles, the mileage should represent four sets of shoes, which, at say $50 apiece, would amount, if bought separately as used, to $800 for the four sets, making a total expense for fuel and tires alone of $950, which is preposterous in the light of the doctor's statement over his own signature.

It is recognized that it is the inherent right of every free born American citizen to believe that he knows better how to conduct the editorial department of a paper than the editor does, but we are inclined to disagree with Mr. Adkins as to the deleterious effect that the publication of such letters as Mr. Myers' and Dr. Fetterhoff's has, and to offer the freedom of these columns to others who have been similarly fortunate in the use of their cars.

Carbureter Trouble and Remedy.

Editor THE AUTOMOBILE:—

[167].—I have a 1904 Ford machine that I have just put a new Kingston carbureter on. The motor runs as fast as it ever did when the machine is standing still, but when the machine is in motion the motor hasn't any power whatever. The motor has such a suction that the frost collects on the intake pipe about one-sixteenth of an inch thick. Please advise me what to do.

Eaton, O. B. B. B.

The trouble with your carbureter seems to be that it does not supply sufficient gasoline at low engine speeds. Lack of gasoline at low speeds is due either to the air passages around the spray being too large to induce the necessary suction, or, if the suction is sufficiently intense, then the area of the gasoline spray is too small.

When the motor is run fast the suction, or depression, is greater than when the speed is low; consequently, enough gasoline is aspirated to form a good explosive mixture.

The remedy for your trouble would seem to be adjusting the carbureter so that it will give more gasoline at low speeds, or when the suction is weak, taking care that too much gasoline will not be drawn in at high speeds, or when the suction is strong. If you do not understand the carbureter well enough to do this, it will be best to procure a copy of the manufacturer's directions and be guided entirely by the suggestions therein.

The frost on the inlet pipe indicates that you are not feeding the proper amount of hot air to the carbureter. The remedy is obvious. Be careful, however, not to get the carbureter too hot, or you will reduce the power of the motor.

Song of the Automobile.

You may sing of the rail,
Of the lightning trail,
Of the limited mail,
As it thunders along the track;
You may boast the speed
Of the noble steed
That won the meed
In the last great handicap.

You may talk of the reign
Of the aeroplane,
The wonderful wain
That shall cleave the air like a lark;
Of your ocean floaters,
Your new-fangled rotors
And electric motors
That can lift twenty tons with a spark.

But the automobile,
With its nimble wheel—
It takes the deal
As it spins as light as the breeze;
'Tis after my notion,
In fullest proportion,
The perfection of motion,
For speed and for comfort and ease.

—*E. F. Andrews.*

Patents

Delivery Wagon Body.

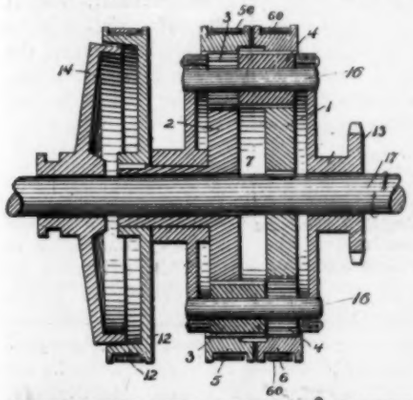
No. 781,071.—E. R. Hewitt, of New York.

A body designed for a vehicle having a horizontal engine beneath it. To give ready access to the engine, the body is divided transversely through the footboard, and its main portion is slidable backward on the channel iron frame, being guided by suitable iron projections beneath. When in its normal position it is held by two hooks at the front end and two bolts at the rear end.

Three Speed Planetary Gearing.

No. 782,547.—B. M. Coffee, of Richmond, Va.

A mechanism in which the gears are arranged like those of a spur gear differential, but with the pinions projecting through the periphery of the case, so that they mesh



COFFEE THREE-SPEED PLANETARY GEARING.

with internal gears integral with the rings on which the friction bands act. In the drawing, *1* and *2* are the principal spur gears, connected by pinions *3* and *4*, which turn on pins *16* in the case *7*, to which the sprocket pinion *13* is secured. Gear *1* is keyed to the power shaft *17*, and *2* is secured to the friction drum *12*. Meshing with *3* and *4* are the loose internal gears *5* and *6*, on which the friction bands *50* and *60* act. For the slow forward speed, *60* is tightened, compelling *4* to roll inside of *6* and giving *16* a linear speed one-half that of the teeth of *1*. For the reverse, *50* is tightened, producing the same result with the direction reversed. For the intermediate forward speed, the band on *12* is tightened, rendering *2* stationary. This causes *3* to roll around *2* in the same direction as *17*, but with the result of giving *16* one-half the *angular* speed of *1*, exactly like a differential running with one wheel held stationary. The clutch *14* gives the direct drive.

Tilting Body.

No. 780,746.—N. T. Harrington, of Detroit.

A body design for horizontal motors under the seat. The seat is hinged at its top front edge, so that seat and back tilt up to expose the mechanism; the front panel and the footboards also tilt.

Process of Lubrication.

No. 780,779.—C. Comstock, of Brooklyn, N. Y.

An arrangement for feeding oil drop by drop on to a body of flake graphite, some of which it picks up and carries with it on its way to the cylinder or bearing, designed mainly for steam engine lubrication.

Attachment for Side Springs.

No. 781,070.—E. R. Hewitt, of New York.

A wood block so placed as to limit the rebound of the long side or Concord spring much used in runabouts. The inventor points out that excessive play of these springs throws the axles out of line and produces an uncomfortable motion of the car.

Front-Wheel-Drive Axle.

No. 778,791.—W. S. Morgan, of Russell, Minn.

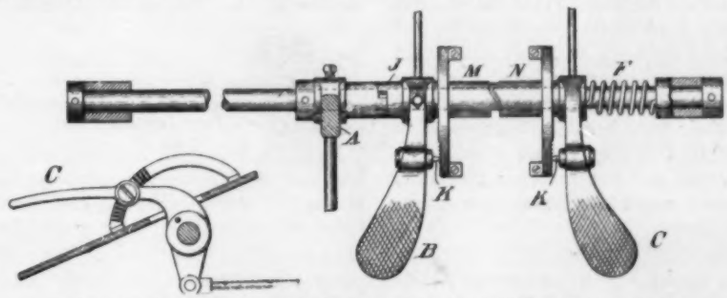
An axle for four-wheel drive, consisting of a large housing forming the axle proper, large steering knuckles connected thereto, and a contained driving shaft with universal joints inside the steering knuckles.

Pedal System of Control.

No. 782,548.—E. N. Dickerson, of Stovall, N. C.

This is a system by which one pedal releases the clutch—and, if desired, applies the brake also—and two additional pedals are employed, one to control the throttle and one the spark. These latter two are so connected to the clutch pedal that releasing the clutch reduces the throttle and retards the spark; but on engaging the clutch again the throttle and spark remain unchanged till operated on voluntarily by the driver.

In the drawing, *A* is the clutch pedal, shown partly broken away, since it is a push pedal, whereas the others are piano



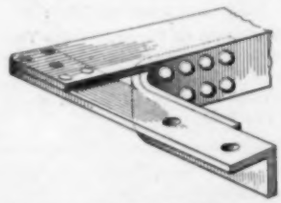
DICKERSON'S PEDAL SYSTEM FOR CONTROL OF THROTTLE AND SPARK.

pedals. The throttle is opened by pressing *B* down, and the spark is advanced by pressing *C*. Pedals *B* and *C* are held where set by the spring latches *K K*. By means of lug *J*, *B* may be forced up when *A* is pushed, thus reducing the throttle and preventing the engine from racing. Attached to *B* and *C* are the hubs *M N*, with beveled lugs so placed that when *C* is down and *B* is forced up by *J*, *C* is moved to the right against the spring shown, till its latch *K* is clear, thus permitting it to rise to the "retarded" position. It is evident that with this arrangement the spark pedal will not be held by its latch with more than a limited advance beyond the corresponding position of the throttle, but this may be an advantage rather than otherwise.

Frame Detail.

No. 781,068.—E. R. Hewitt, of New York.

A method of forming the corners of an angle iron frame. The ends are split and



HEWITT FRAME CONSTRUCTION.

the vertical webs lapped and riveted, while the horizontal webs are likewise joined as the drawing shows. A very strong and stiff joint is thus produced.

Flash Generator Control System.

No. 728,624.—J. A. and J. M. B. Rey, of Paris, France.

A system modified from the Serpollet in two ways. The fuel and water pumps, instead of being operated synchronously by one lever with a fixed ratio of stroke, are operated separately, but from a common shaft; and each pump contains a relief valve which returns the liquid pumped to the suction side of the pump when the pressure exceeds desired limits. The quantity actually delivered to the generator or burner is regulated by throttle valves, which are connected to the steam throttle so that all three are simultaneously operated. Thus an increased throttle opening results in increased feed at all three points. As a precaution against flooding the generator at high speed, when the evaporation per pound of fuel is less than at low speeds, a centrifugal governor is applied to the lever operating the water pump, in such a manner (by a slotted link and shifting rod) as to vary the stroke of the pump inversely as the speed. Thus a definite limit is fixed to the amount of water which can be delivered to the generator, and this limit is adjusted to suit the capacity of the burner.

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Lessons of the Show Season.

With the close of the Boston exhibition the show season has practically come to an end, and for this much thanks. The interruption to the regular order of business which the continuous show performance occasions is a serious tax on the energies and patience of those who have to follow the route. This interruption is especially hard on the manufacturers and dealers in components and specialties, who are not as thoroughly represented locally as the complete vehicle builders and who have to drag their paraphernalia from show to show, feeling that they cannot afford to be unrepresented and yet knowing that time and energy so spent is to a large extent uselessly dissipated.

If the shows of 1905 have proved anything, it is the necessity for a great annual National trade exhibition in which those concerns that depend upon the distributor rather than the individual purchaser for their sales can make an adequate display. Instead of frittering away their time and money in a succession of more or less important sectional exhibitions, they could concentrate both on one great trade show and map out their business program for the ensuing year. Such a show, as we have before discussed, could be held late in the year, giving the manufacturers an opportunity to determine the probable amount of the next season's sales, and then to return to their factories and get their output ready to meet the demand that would be created by the public shows held locally before the opening of the following season.

Probably this condition to be desired will be brought about only when the good of the industry rather than personal profit will be the guiding motive. The Boston Show has demonstrated that even the largest public exhibitions can be trusted to the management of the local dealers with credit to everyone concerned.

Another important result of the show season now ended is the elevation of the standard of show management and display, first disclosed by the Importers' Salon in New York and ably seconded by the Boston Dealers' exhibition in Mechanics Hall. The artistic excellence of the former, the scrupulous neatness and tasteful ensemble of the latter, and the courteous consideration of public comfort in both, have created precedents on this side of the Atlantic that cannot be ignored.

The dirt, overcrowding, and general uncouthness of the so-called National shows have become intolerable by comparison. Show facilities everywhere in this country are unfortunately inadequate, yet what can be done by enterprising and liberal management has been so plainly demonstrated that in future, show promoters, if they are to preserve any of their claims to public consideration, must make the most of their opportunities.

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Recrudescence of the Steam Car.

Observant visitors to the recent Boston Show could not fail to have been impressed by the unexpectedly large exhibit of steam machines. Though small in point of numbers as compared with the gasoline cars, the steam exhibit was of really great interest and was indeed the feature of this fine show. Had the cars been grouped together, instead of being scattered about the halls in widely separated stands, the extent of the exhibit would have occasioned considerable public comment.

New England, and especially the neighborhood of Boston, has always been the stronghold of the steam car, and this is not surprising when the occupation and mechanical bent of so many of the residents of that section are considered. It is the birthplace of the Corliss engine, and is a section in which manufacturing, with the attendant widespread use of steam power, is the principal occupation rather than agricultural pursuits.

An inspection of the steam exhibits must have forced in on the most strenuous advocate of the gasoline car that the steam machine has attractions for a considerable percentage of automobile users. In the smaller types the steam runabout has always been with us, and in the larger cars the great success of the highly specialized White system has had a large share in the recrudescence of the steam machine. The success of that system shows what can be accomplished by the application of sound engineering principles and continuity of purpose in developing a method of vehicle propulsion that is fundamentally correct. It is hardly open to doubt that in the earlier days had steam received the serious attention of competent persons the steam car would be more in evidence to-day than it is. Except in isolated instances, however, it did not, and as a consequence the troubles that users experienced in the operation of cars caused them to welcome some other form of motive power as a means of relief.

Now matters are on a different footing. The exhibits at Boston showed that the day of the tea kettle on wheels is gone. Profiting by the failures the steam car builders have put brains into the problem. Good workmanship is the rule, not the exception, and a wide variety of well thought out methods is offered the purchaser, who, if he is possessed of the mechanical instinct that enjoys car manipulation as one of the chief sources of pleasure in automobiling, will not lightly pass over the claims of steam on his attention.

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English Makers Decide on Fall Show.

With the show season practically ended, it is not without interest to note the action of the Society of Motor Manufacturers and Traders, which embraces all of the organized automobile industry of England, following the conclusion of its recent very successful exhibition in Olympia, London. The society has decided to hold its next exhibition at Olympia in November instead of in February, as it did this year, giving as a reason for its action that the manufacturers will be enabled to show their cars at the best season of the year and before the trade has been monopolized by earlier shows abroad. At the same time the society decided to continue to admit commercial vehicle and power boat exhibits to the show, maintaining that the manufacture of pleasure cars, commercial motor wagons and automobile boats is conducted often by a single concern and that the industries are therefore too closely allied to be separated.

Granted the capacity of the exhibition building admits of it, the decision on the latter point seems as well taken as that to advance show week from late winter into the late fall; the majority of users of autoboats are first automobilists, and it is no difficult matter to show the relation between the use of pleasure automobiles by the officers of large commercial houses and the later adoption by such establishments of automobile delivery wagons, trucks and drays.

The advantage of fall shows in the matter of more suitable weather is of less consequence than the fact that the holding of the

exhibition three months earlier will allow the placing of orders enough sooner to give the manufacturers opportunity to make deliveries of cars before the advent of the spring driving season, a matter of the utmost importance to both the manufacturer and the purchaser.

BATCHELDER TO SUCCEED GILLETTE.

The resignation of C. H. Gillette as secretary of the American Automobile Association was announced officially on Wednesday, March 22. The resignation takes effect on May 1, when the work of the office will be taken up by A. G. Batchelder, who has been selected by the board of directors to act as secretary of the A.A.A. racing board as well as general secretary of the organization. Mr. Batchelder's long experience as chairman of the racing board of the National Cycling Association, as a handicapper for bicycle races, and as a newspaper man, peculiarly qualifies him for the position. Business and personal affairs necessitate Mr. Gillette's removal to Hartford, Conn.

NEW YORK HIGHWAY MANUAL.

Of more than usual interest and usefulness, especially to automobilists, is the Highway Manual of the State of New York for the Year 1904, compiled and published by Charles H. Betts, of Lyons, N. Y., Chief of the Revision Department of the State Assembly, in compliance of the law requiring the annual "publication and distribution of a compilation of the highway laws." The book, which embraces nearly 500 pages, is a great deal more than a mere compilation of the road laws; it contains, in the appendix, an article by State Engineer Henry A. Van Alstyne, containing some of the most scientific information and most practical suggestions relative to the construction of good roads that have ever been published, and interesting and instructive addresses on different phases of the good roads question by such authorities as Hon. William W. Armstrong, author of the Higbie-Armstrong state aid act; Hon. Jean L. Burnett, author of the act appropriating $1,500,000 for good roads; Hon. Joseph W. Hunter, state highway commissioner of Pennsylvania, and a paper on "Special Economy in Road Construction," by Frank D. Lyon, special examiner of highways for the state of New York.

The multiplicity of laws applying to the making, maintenance and use of the roads is in this year's annual arranged by chapters devoted to particular subjects, and so explained by notes and cross references as to straighten out apparent inconsistencies and make clear the exact state of the law in respect to each proposition. The act relating to the licensing of automobiles and the use of them on the highways is given in full, and there is a chapter of "Miscellaneous Provisions," such as "Law of the Road," "Intemperate Drivers," "Leaving Horses Without Being Tied," "Entitled to Free Use of Highways," and "Use of Highways by Automobiles."

God bless the man who first promoted motor-races,
But hail the man with curses loud and ungracious
Who first suggested motor-shows.
—Motoring Illustrated.

DRASTIC BILLS DEAD AT ALBANY.

Arguments of Manufacturers' Association and Automobile Club of America Representatives on Tuesday Prevail Against Wilsnack Measure—Legislators Inclined to Stand by Old Agreement.

Special Correspondence.

ALBANY, March 21.—All drastic legislation tending to amend the State automobile law for the purpose of harassing owners and operators of motor vehicles is considered dead in both branches of the Legislature. The last effort made by those who seek to make criminals of every auto owner or operator who chances to violate the law, no matter how innocently or accidentally, to secure an amendment to the law so that all first violations shall be subject to the penalty of imprisonment was made and defeated to-day.

After a hearing before the Assembly committee on internal affairs, it was voted not to report the Wilsnack bill, and it was decreed, though not publicly announced, that the bill was dead for this session. The committee on rules has power to drag it out during the last ten days, but is not expected to do so.

At the hearing this afternoon Attorney Charles T. Terry, of New York, representing the National Association of Automobile Manufacturers, stated plainly that it was understood last year when the auto owners agreed to the present law of one hundred or more offenses penalized as misdemeanors, that no legislation would be enacted until the act had been fully and fairly tried. The use of the highways was a natural right, and if so disposed the automobile owner could claim it without restrictions, but they had agreed to the enactment and the law was working well. There was nothing needed for the protection of the public save the enforcement of the law as it stands. The Wilsnack bill was unreasonably oppressive. It proposed to make it a jail offense, he said, if a woman or man should chance, with every intention of obeying the law, to run down hill and across a bridge or dam at a speed greater than four miles an hour. The automobile owners were not a class of criminals. The reckless and irresponsible chauffeur, if a chronic offender, could be reached by the present law as easily as habitual violators of other laws. There was no sense in piling up penalties. The advocates of the bill were arguing for an absurdity when they declared that the law was not enforced where imprisonment could be imposed as a penalty and in the same breath would add that penalty to the first offense against the law instead of, as now, only after a repetition of the violation. There was no public sentiment for the bill, he declared; it was unfair, unjust, and would not better protect the public.

Ex-Assemblyman W. W. Niles, who, with Secretary S. M. Butler, came up from New York to represent the Automobile Club of America, said that it was a mistake to try to pass a law which the law-abiding automobilists were opposing. If the present law was not satisfactory after a fair trial, then get together with those law-abiding citizens who operate motor vehicles and frame a better one by mutual advice and consent. A year was not long enough to determine whether the present law was a success or a failure. So far as it had been studied it had worked satisfactorily. The proposed Wilsnack amendment was illogical and absurd. It made an arbitrary speed limit of ten miles an hour, and proposed to make a criminal and a jail bird of any person of whatever sex who should, by reason of a defective speedometer, or miscalculation, innocently or accidentally be guilty of the slightest infraction of the law.

President W. H. Hotchkiss, of the New York State Automobile Association and the Buffalo Automobile Club, read letters from the Road Drivers' Club and Police Commissioner McAdoo to President Scarritt, of the A. C. A., in which they endorsed the present law, and thought that the persistent violators could be reached and punished under it.

The Saxe bill, practically the same as the Wilsnack bill, was killed in the Senate committee last week, and now it is not expected that any of the more drastic bills will be moved in committee even. The policy of the Legislature seems to be at present to stand by the agreement and understanding of last year, that the present State auto law should have a fair trial.

O. A. Quayle, of the Albany Automobile Club, and a director of the State Association, was present but did not speak at the hearing to-day.

WOULD CURB CHAUFFEURS.

Use of Machine Without Owner's Consent Made a Misdemeanor.

Special Correspondence.

PHILADELPHIA, March 20.—Believing that in the majority of instances the chauffeur is responsible for speed excesses, and realizing that under the present law the owner has no remedy except the discharge of the offender, the Automobile Club of Philadelphia will cause to be introduced at the present session of the legislature a law which, it is hoped, will provide a remedy. Combined with it will be a section making it a misdemeanor to throw into the public roads any sharp materials calculated to puncture tires, thereby endangering the occupants of automobiles whose tires may suffer injury.

The text of the bill, which seems to meet the views of all, and will meet with little or no opposition in either branch of the legislature, is as follows:

"Any person or persons taking, using or operating any motor vehicle properly registered under the laws of this state without first securing the consent of the owner thereof, shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be sentenced to pay a fine not exceeding $100 and undergo imprisonment not exceeding ninety days.

"If any person or persons shall wilfully and maliciously cast, throw or cause to fall on, into or strike against any motor vehicle properly registered under the laws of this state any wood, stone or other matter or thing; or shall wilfully and maliciously cast, throw or cause to fall into or upon any of the traveled roadways of the state any tacks, glass, wood, stone or other obstruction, with intent to injure such motor vehicle or to endanger the safety of the occupant or occupants thereof, he, she, or they, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine not exceeding $1,000 and undergo imprisonment not exceeding three years."

A similar law, introduced in the New Jersey legislature last week, gives evidence that representative automobile organizations in this section are acting in accordance with a prearranged plan.

It is said that cars in which the motor is placed high are less liable to side-slip than those in which the motor is hung low.

NEW HAMPSHIRE'S AUTOMOBILE ACT.

Although Based on Massachusetts Law It Contains Special Provisions to Allow Road Racing, to Revoke Licenses and Imprison Chronic Offenders—Excessive Totals for Fees.

A very interesting automobile measure is pending in the legislature of New Hampshire, having been introduced by Mr. Kittredge, of Milford, reported from the committee on ways and means and reprinted. It is known as House Bill No. 9, and is in many of its sections almost a verbatim copy of the law now in effect in Massachusetts (Act of 1903, chapter 473); there are, however, some very important changes and additions.

A provision that will meet with the approval of automobilists, and which was evidently incorporated in the interest of the Mount Washington "Climb to the Clouds" and other road contests, is contained in Section 12, as follows: "Nothing in this act shall be construed to prevent the selectmen of any town, or the joint boards of the selectmen of two or more adjoining towns, from issuing a special permit to the manager or person in charge of an automobile meet or gathering for trials of speed or endurance upon a particular highway or over a specified route. But such permit shall be limited to days specified therein. Every family residing on such highway or route shall be notified in writing, and the public shall be notified by publication in the local newspapers issued the week next prior to such meeting, that such permit has been granted. All expenses incurred under this section shall be paid by the applicant, and no such permit shall be a protection from the general provisions of this act, except upon a strict compliance herewith, and shall in no way annul or modify any of the provisions of Section 9 of this act."

CONVICTIONS RECORDED AT CAPITAL.

A section that will be more to the liking of the farmers and anti-automobilists is Section 10, providing the following penalties:

"Any person convicted of violating any provisions of this act shall be punished for the first offence by a fine of not exceeding ten dollars and costs. Any person convicted of a second or subsequent offence shall be punished by a fine of not exceeding fifty dollars, and the revocation of his license or privilege. Any person convicted of operating an automobile or motorcycle after a revocation or suspension of his license or privilege shall be punished by a fine not exceeding one hundred dollars, or by imprisonment not exceeding thirty days, or by both such fine and imprisonment. A court convicting any person of violating any of the provisions of this act shall at once notify the secretary of state of such conviction, with the number or mark of the machine and license, and shall transmit other information obtained at the hearing. This shall be recorded by the secretary of state, and if at any time it shall appear that any person has been convicted of a first offense in more than one court in this state, the fact of the second conviction shall be deemed a second offense, and his license, or, if a non-resident, his privilege, shall be revoked. Upon such revocation his license shall be returned to the secretary of state. The secretary of state shall not again grant a new license to any person, or renew the privilege of a non-resident, after revocation under the provisions of this section, except for good reasons shown, and not before the expiration of three months from the date of such revocation."

Other variations from the Massachusetts law are an increase in the registration fee for a vehicle from $2 to $3, the requirement that two license tags, supplied by the secretary of state at a price of $1 each, be attached conspicuously, one to the front and the other to the rear of the vehicle, and that although a non-resident who has registered in another state may drive in New Hampshire without obtaining a license in that state, such privilege granted to a chauffeur may be revoked or suspended for cause by the secretary of state of New Hampshire.

The proposed new law requires, first, the registration of every car, at a fee of $3, to remain in force until the vehicle changes ownership, when the registration certificate must be returned, accompanied by a notice of sale and the corresponding number plates; second, the issuance of a license or permit to operate a car, at an annual fee of $1; third, the taking out of special licenses to operate automobiles for hire, at a fee of $5 each. From the phraseology of Section 5, this last license appears to apply to any person employed as chauffeur, whether by a private individual or a dealer renting automobiles.

Thus, the private owner of a car, who employs a chauffeur, and who also drives his own car occasionally, unaccompanied by his chauffeur, must pay $3 for registration of his car, $2 for two number plates, $1 for his own operator's license, and $5 for his employee's driving license, a total the first year of $11, and annually thereafter of $6.

As in Massachusetts and New York state, the bill fixes speed limits of twenty miles an hour in the open country, and eight miles an hour in the built-up sections of towns and cities, with special limitations on crossings, curves and bridges, and the usual requirement as to stopping when meeting restive horses.

SHIPPERS WIN FIGHT.

Provisions of Uniform Bill of Lading Will Not Be Enforced.

Special Correspondence.

WASHINGTON, D. C., March 18.—It will be gratifying news to automobile shippers in the Central Freight Association territory to learn that it has been decided to abandon the proposed attempt to enforce the provisions of the new uniform bill of lading. This decision was reached after a lengthy conference between representatives of the railroad companies and attorneys for a large number of shippers.

It will be recalled by automobile manufacturers who have followed the history of this measure that it was to have been made effective January 1, 1905. A strong fight was made by the various shipping interests of the country, who carried the matter before the Interstate Commerce Commission at Washington.

The principal objection urged against the proposed bill of lading was that by its terms whenever common law liability was assumed by the carriers a charge of 20 per cent. of the published rate was to be made, but that where limited liability service was given the present schedule of rates would apply, the shippers contending that in effect there was no difference between common law and limited liability service, and that common law liability in itself was a limited liability. This statement was not successfully controverted by the railroad interests at the various hearings before the Commission.

LONG HEARING ON CONNECTICUT BILLS.

Representative Opinions as Expressed Before Committee of State Legislature Favor Reasonable Laws as to Speed, Licensing and Lighting—Opposition Due to Reckless New Yorkers.

Special Correspondence.

NEW HAVEN, March 20.—Hard times are in store for reckless automobile scorchers from outside the state of Connecticut, judging from the determined attitude of representatives of the Farmers' Association at a hearing on the ten bills that have been introduced in the legislature at this session, which was held before the committee on public health and safety in the senate chamber of the state capitol in Hartford last Friday.

The hearing attracted prominent automobilists and others, and was also attended by a large delegation from the Farmers' Association, which is generally reported to "have it in" for autoists in general. Among those present were Attorney M. Toscan Bennett, representing the National Association of Automobile Manufacturers; Assistant Prosecuting Attorney Harrison B. Freeman, Jr., representing the Hartford Automobile Club and in his official capacity; Judge James E. Cooper, of New Britain, representing the New Britain Automobile Club; J. Howard Morse, president of the Hartford Automobile Club; Attorney W. T. Hincks, of Bridgeport; Representative E. A. Smith, of Hartford; Representatives Fosdick and Northrop, of the committee of the Farmers' Association; W. R. C. Corson, Governor Roberts, Highway Commissioner Macdonald, Street Commissioner Angus, and Ex-Representative Philbrick.

The various measures were taken up in groups; first the petitions for exclusion of automobiles from the country roads; next all registration matters; third, the speed limit bills; fourth, the light bills.

As there was no support of the prohibitive bills, and upon the statement of Attorney Harrison B. Freeman, Jr., representing the Hartford Automobile Club, that they were plainly unconstitutional, the committee made haste to deposit them in the receptacle for rejected petitions and later voted to report them adversely.

DISCUSSION ON REGISTRATION BILLS.

The registration bills were next considered. Two provide for the retention of old numbers when owners sell one machine and get another; a third provides that the law shall apply to vehicles for hire (as it does now); a fourth requires manufacturers to have their test cars marked, which is not the case now; and a fifth provides for the renewal of registration every year.

Representative Marvin, of Saybrook, advocated the bill allowing the retaining of the old number when an owner gets a new machine, as did J. Howard Morse, president of the Hartford A. C., and W. L. Hatch, of New Britain, and it was shown that this would prevent misuse of old numbers and also tend to keep the numbers smaller in size and so easier to read. Judge James E. Cooper, judge advocate general on Governor Roberts' staff, stated that people generally feel that manufacturers' test cars should be numbered or made identifiable in some way. As it is now, those who naturally drive the fastest in testing out cars are the only ones exempt from the law. He also favored having a number at each end of a car. He made a point that autoists, as well as people in general, want legislation to protect them from reckless drivers.

Attorney Bennett, representing the N. A. A. M., said that the manufacturers are perfectly in accord with the people in the matter and stand ready for some sort of registration, it being simply a matter of detail. He agreed to present to the committee a bill that would embody this point. Representative Fosdick, of Lyme, told of the troubles the shore towns have experienced with New York state scorchers, and advocated having a big number on the front of cars so one could see it before the car "hit him." Ex-Representative Woodruff, of Litchfield, said he thought the attempt of the New Yorker to get through to Newport quicker than some one who had preceded him shortly caused most of the trouble in this State. He did not think, therefore, that we should be too easy on New York, Massachusetts, and Rhode Island automobilists.

Attorney Bennett pointed out that reciprocal legislation with other states in regard to the carrying of license numbers should be taken into account. Connecticut now recognizes the license tags of other states, and the requiring of numbers on both front and rear would make innocent outsiders liable upon coming into this state.

Mr. Morse made a suggestion that the state fix on a uniform system of numbering—figures the same size and color, placards the same size, and backgrounds all alike.

Representative Ruic, of Farmington, told of the troubles of the authorities in his town and how autoists touring through there last summer had affixed their license numbers to strings and jerked them up when passing through at an unlawful rate of speed.

Argued for Hartford A. C. Speed Bill.

Speed bills were next considered. The present law provides a limit of twelve miles an hour in cities and fifteen miles outside, but at no time must the rate be greater than is consistent with safety to life and property. One bill introduced by Representative E. A. Smith, of Hartford, increases the limit to fifteen miles in cities and twenty-five outside, and has other provisions besides. One by Representative Fosdick, of Lyme, makes the limit twelve miles everywhere, day and night, but on broad country roads in day time twenty miles may be the speed. Representative Northrop, representing the Farmers' Association, has a bill providing for the stoppage of a car at least 100 feet from a horse that appears to be frightened.

Prosecuting Attorney Freeman, of Hartford, spoke on the Smith bill which is presented for the Hartford Automobile Club, and said that from his experience of prosecutions brought under the present law, he, as prosecuting attorney, was in favor of the bill. He was not for the present law and does not want a law that everybody violates. The provision in the bill that all fines go to the town or city and that all officers' fees be not over $3, Mr. Freeman touched on at length, stating that the officers all over the state had gone into the business of holding up automobilists as a money making business. It is done all over the state and brings discredit to the law. Country officers get money out of it, and in some cases fees can be figured up to $13 or $15 as things now are, he said. All of this would be prevented under the proposed bill.

Representative E. Samuel Gillette, of Burlington, pointed out that the decent autoists are being made to suffer for the "hog" autoists, and stated that he had no objection to a twenty-mile limit in the country, but wanted the new law enforced, including a jail penalty clause. He favored letting automobilists go twenty miles an hour and even faster so long as they respected the rights of the farmer. His speech occasioned much applause.

Blamed Irresponsible Chauffeurs.

F. W. Dart, proprietor of the Palace Auto Station in New Britain, said that chauffeurs taking owners' machines without permission and hustling back again are largely responsible for the feeling against automobilists. Touching on the speed limit, he stated that he would ask for nothing better in the way of speed than to be allowed to run his car as fast as the trolleys to New Britain, to Springfield, or West Hartford.

Later, Representative Fosdick was heard on his petition. His particular grievance was against the racing outsiders who charge through the state from New York to Newport and back at a speed as high as fifty and sixty miles an hour in some places. He had no objection to a law providing for twenty-five or even thirty miles an hour. He objected to the provision in the present law allowing mayors and other officials to give permits for racing on roads. The roads were not built for such purposes, he said, and he hoped that a sufficient penalty would be provided by whatever law was passed to prohibit this highway racing along the shore route.

Advocated Higher Speed Where Safe.

Attorney Hatch pointed out that where "traps" were usually set for automobilists is on stretches of road where good speed is perfectly safe, while in places where autos ought to go slower for the sake of safety to others, no traps were ever set; a trap would not be a money maker in such a place. He also told of traps on down grades which were confessedly set for "what there was in it." Judge Cooper said that the present law has such a low limit that no one ever observes it. He believed twenty-five miles an hour to be safe in some places. No bill should be passed entailing any hardship on persons who wish to drive automobiles in a safe way, but the "road hog" should be prevented from making further trouble.

J. Howard Morse, president of the Hartford Automobile Club, said that even no speed limit at all was preferable to the present conditions, and favored a bill of this nature, providing a most rigorous penalty for all who should drive their cars so as to endanger life or property. This he thought would protect all concerned.

Highway Commissioner Macdonald suggested turning over the license fee and any fines from prosecutions to his department to keep the roads in order, also having the rate of speed on curves diminished. The idea of allowing good speed where safe was all right. On some roads he thought the matter would take care of itself, as on some highways in the state automobiles, no matter how geared or how powerful, couldn't make a mile an hour. Make the speed limit a reasonable one, he said, and perfect the law from year to year as experience teaches; give the autoists the same privileges on the roads as are enjoyed by others, but have no dead letter laws.

Universal Lights Favored.

There are three light bills. One provides that all autos must have lights showing from the front, red on one side and white on the other, and vice-versa from the rear, only autos to have such lights. A second provides for lights on all vehicles using the highways from one hour after sundown to one hour before sunrise. The third requires every vehicle on the road to show one hour after sunset to one hour before sunrise a light or lights visible 200 feet from front and rear.

Attorney Cooper read from Governor Roberts' message his statement in favor of having all vehicles carry a light at night, and advocated the bill. The object is not to light the road, but to make known the presence of the vehicle. Many farmers' representatives also spoke in favor of the light bills. William H. Caldwell, of New Britain, for the New Britain Automobile Club, spoke for a general lantern law. He was the last speaker, and the hearing was closed after a session of more than five hours.

REASONABLE WISCONSIN LAWS.

Hearing at Madison Likely to Result in Passage of Favorable Bills.

Special Correspondence.

Milwaukee, Feb. 18.—In response to an invitation issued by the secretary of the Milwaukee Automobile Club, automobilists from all sections of the state appeared in Madison last Wednesday to present their arguments before the committee on state affairs when pending bills hostile to automobile interests were taken up for consideration. As a result of the full and unhampered discussion there is a better understanding by all interested, and there is a disposition manifest on the part of the members of the committee to favor reasonable restrictions in preference to the drastic measures proposed by a number of up-state members of the legislature.

The Milwaukee club was represented by James T. Drought, chairman of the legislation committee, and Rev. J. F. Szukalski, ex-president of the club. Mr. Drought opened the argument, saying that the automobilists of the state were anxious to meet the legislators half way, and in case a reasonable measure were enacted into law it would be observed not only in letter but also in spirit. He said that automobilists of Milwaukee were not opposed to reasonable speed limitations or provisions making it necessary to display lights on automobiles, but were unqualifiedly opposed to being discriminated against by being compelled to attach tags to their cars and to secure licenses before operating their machines.

Rev. J. F. Szukalski maintained that an automobile, if properly handled, was no more obnoxious than a horse and buggy or a bicycle. He said that a license fee for the privilege of operating an automobile amounts to double taxation on personal property; that registration and placarding of numbers on machines imposed burdens on automobilists that were not borne by any other users of the highways, and were therefore unconstitutional.

Other speakers representing various automobile clubs located in different sections of the state contended that the automobile was a new and improved method of locomotion which had come to stay, and that drivers of other vehicles would have to accustom themselves to it; that the highways are dedicated to public use, and the rights of the automobilists must be respected, and that no burden should be imposed on automobilists that is not imposed upon other users of the highways.

Thursday night a regular meeting of the Milwaukee Automobile Club was held, and the chairman of the committee on legislation reported that it was safe to venture the prediction that a law favorable to automobilists would be passed by the legislature. It is possible that the local club will be compelled to make a concession and submit to a provision requiring the registration and licensing of machines, in which case the license will be perpetual, and the number secured upon the payment of a nominal sum may be retained so long as the purchaser of a license keeps possession of his car. The speed regulation is likely to be twelve miles an hour in the city and twenty miles an hour in the country. All automobilists agree that the law should be state-wide in

its operation, thereby cutting off the power of local regulation in each city, town and village in the state, which would result in endless confusion.

In addition to discussing pending legislation, the Milwaukee club took up the question of a floral parade on carnival day during the convention of the Modern Woodmen of America, and decided to refer the matter to Mayor Rose, who had extended the invitation, and to local auto dealers.

Eight applications for membership were favorably received Thursday night. The applicants are Dr. Lewis Sherman, Louis Allis, O. L. Curtis, Henry H. Rise, Dr. Arnold Strauss, O. Greenwald, Edward Larsen and J. C. Ladewig.

GETTING AFTER TESTERS.

Detroit Magistrates Bent Upon Breaking up Habit of Fast Driving.

Special Correspondence.

DETROIT, March 20.—Word has gone out among the police court judges of the city to "soak" automobile testers working for the various manufacturing concerns of the city, and the policemen on the beats have been warned to haul them up for any violation of the speed law. No leniency is to be shown in the future, because of the flagrant violations by these drivers.

Detroit suffers from this perhaps more than any city in the country because of the immensity of the industry. With upwards of 10,000 cars turned out of Detroit every year, it may be imagined what an amount of road testing goes on in the season. The killing of eight-year-old Earl Houghton, son of the president of the Houghton-French Ice Company, has brought the matter to a head. The boy was killed March 7 while on his way from school by being struck by an automobile driven by Louis Maier, on Kercheval avenue. It is said that the auto was going at great speed. The coroner's jury has found that the death of the child was due to carelessness on the part of the driver, and the case will probably be taken up by Prosecutor Hunt.

Only two days ago Judge Murphy, of the recorder's court, made a precedent by fining one driver arrested near the same spot $25. George Coombs, another driver for a manufacturing company, was haled into court for driving a car without a number at a fast rate of speed. Coombs pleaded guilty, and said in excuse that the foreman told him he wouldn't need a number, as it was such a muddy day and the distance to go was so short. The ordinary fine for this is $10, but Judge Murphy said:

"I fine you $25, and make it so strong that it will come out of the company, and not you. I don't want you to suffer because you obeyed the firm's orders, but I want them to know that ordinances are made to be obeyed. If you had killed one of those children, as the Houghton boy was killed the other day, we could not have located you without a number, or the proprietary company."

Herbert Frey, of another manufacturing company, was arrested for driving on the wrong side of the street, and had quite a tiff with the court. He asserted that he was a good driver and knew how to handle a machine.

"But you might hurt a human life," said Judge Murphy.

"I admit that," said Frey.

"Then, if you admit it, pay $10," said the court.

No mercy is to be shown to auto testers, and the policemen on the east side of the city, where most of the factories are located, are keeping a close watch upon them.

ILLINOIS LEGISLATION.

Senate Passes New Measure Which Is Likely to Become Law.

Special Correspondence.

CHICAGO, March 20.—The bill for the regulation of the operation of automobiles in Illinois, offered by the Chicago Automobile Club, passed the senate last Wednesday by a vote of 36 to 2. S. S. Gorham, secretary of the club, returned on Friday well pleased with the result of his missionary work among the legislators. The bill will now go to the house for its consideration, and there will be a fight there that will not result in such a majority in its favor. However, the club members believe the bill will become a law.

The big touring car that Mr. Gorham operated with such success among the members of the senate will now be devoted with the same zeal to the education of the house members.

"Our first fight was not the hard one," said Mr. Gorham. "But I think that we will win. It may be certain now that there will be no laws passed limiting the speed in country roads to six miles an hour. And that was a strong possibility until we began to work."

LEGISLATORS ARE OBDURATE.

Only Two Michigan Committeemen Have Ideas Modified by Auto Ride.

Special Correspondence.

CHICAGO, March 20.—The bill for the the proposed Michigan automobile bill amended to a more liberal form, automobile owners journeyed to Lansing, the state capital, a few days ago and took the members of the state affairs committee, which is now considering the bill, out for a demonstration ride. After running them about the city at all speeds to show how easy it is to control an automobile, it was supposed that the committee would treat the matter in a more broad-minded manner, but the autoists succeeded in convincing only two members of the committee. These were Representative Manzelman, of Detroit, and Representative McCracken, of Oakland; and were it not for them and Representative Holmes, the framer of the bill, who is disposed to be liberal, it would go hard with Michigan autoists.

The committee, as a whole, still sticks for more stringent measures than are desirable from the automobilists' point of view, although the missionary work of Roy D. Chapin and other Detroiters has been a great help. After the drive the committee went into session and Representative Manzelman tried to have the speed limit for the business portion of cities raised from eight miles to ten miles an hour. Holmes, however, stuck to the first figure, saying ten miles is too fast, and all but two of the committee agreed with him. The limit, however, in other portions of cities was left at twelve miles, and on country roads at twenty miles, which is regarded as considerable of a concession by Mr. Holmes. In the original draft of the bill the country road speed was fifteen miles an hour, and in residential portions of the city ten miles.

Mr. Holmes had previously agreed with Detroit motorists to lower the fine of $50 for the first offense to $25. He announced this to the committee, and there was a great howl. Representative Shook, who was acting as temporary chairman, denounced it, and others talked in the same vein. A vote on the proposition left Manzelman and McCracken the only ones in favor of reduction. McCracken got wrathy about it, and declared that he would fight this provision on the floor of the House when the bill comes up for passage. He thinks $25 is enough for a first offense.

Representative Holmes has himself made one amendment to the bill, inserting a provision requiring all moneys received from registering chauffeurs and fines for violations (with the exception of the amounts to be expended for printing the bill if it becomes a law) to be turned over to the good roads fund, providing the constitution amendment giving the state the authority to extend aid in building good roads, which has passed both branches of the Legislature, is ratified by the people. He also amended the bill so as to allow the issuance of licenses to members of automobile owners' families at 25 cents each.

The fight against certain undesirable provisions of the bill is not yet over, as Representative Manzelman, of Detroit, who is becoming very popular with the automobilists, declares that 500 more copies of the bill will be printed, and an effort made to stir up a little more liberal mindedness. Yet the auto owners are fairly well satisfied.

FARSON INJUNCTION HEARING.

Special Correspondence.

CHICAGO, March 20.—The question of the legality of the ordinances of this city, requiring numbers, licenses and tags for automobiles, will be passed upon by Judge C. C. Kohlsaat this week. The petition for a permanent injunction, which was made by John Farson and a hundred other members of the Chicago Automobile Club, was argued last Wednesday. It is the contention of the plaintiffs that the city's laws violate the fourteenth amendment to the Constitution of the United States.

Judge Kohlsaat said that he would take ten days to consider the matter. Should he decide in favor of the city, the petition will be at once taken to the higher courts on an appeal.

MISSOURI GOOD ROADS LAWS.

Bills Applying Indirect Tax System and Special Levy Pass Legislature.

Special Correspondence.

JEFFERSON CITY, MO., March 18.—The state legislature, which adjourned this afternoon, passed two bills which will help the good roads movement in Missouri. One of them—the Brown bill—authorizes counties to build roads or grade them, by the indirect tax system in use for boulevard improvements in the larger cities of the state. One change was made in the bill as originally introduced, the provision for the office of State Highway Commissioner being eliminated.

The other bill will give the voters of the state a chance to indorse the good roads movement in 1906. It provides for an amendment to the state constitution under which "a state tax of five cents on the $100 assessed valuation shall be levied and collected annually on all objects of taxation. All money derived from this levy shall be set apart and apportioned to the several counties in such manner as may be provided by law, as a permanent fund for public roads and highways."

It is stated that Governor Folk will sign both bills.

Automobil-Wagen-Verbindung des Bayerischen Hochlandes is the name of a company recently formed at Munich, Bavaria, for the purpose of operating an automobile bus service between Garmisch-Partenkirchen and Mittenwald.

AUTO LAW IN MONTANA.

Regulates Speed and Provides for Imprisonment for Violations.

Special Correspondence.

GREAT FALLS, Mont., March 15.—The automobile bill passed by the Legislature has been approved by the Governor and is now in effect. The principal feature of the bill is its regulation of the speed of automobiles. It provides that no motor vehicle shall be run on any public highways outside of city limits, fire districts, thickly settled or business portions of towns, at a rate of speed exceeding fifteen miles an hour, and within the limits of cities, fire districts, thickly settled or business portions of towns at a rate of speed exceeding ten miles an hour.

A fine of not exceeding $200, or imprisonment not exceeding sixty days, or both, may be imposed for violation of the law.

There has been for some time an ordinance on the city records regulating the speed of automobiles, but as there are not more than about half a dozen machines in the city no attention has been paid to it, and no efforts have been made to enforce its provisions.

DELAWARE BILL PASSES HOUSE.

Special Correspondence.

WILMINGTON, March 20.—One branch of the Delaware legislature has passed a bill regulating the operation of automobiles, which is understood to be satisfactory to the Delaware Automobile Association. It provides for the payment of a registration fee by resident owners of machines and the displaying of the State license number in a conspicuous place on the car. Non-residents are given forty-eight hours' exemption. The bill has not passed the senate, but it is thought that it will be passed by that body and be approved by the governor.

Because this measure is pending the Wilmington city authorities have deferred action on the ordinance which has been before council for some time, and the latter measure will be made to conform to the state act if it should become a law.

AIMED AT CHAUFFEURS.

Special Correspondence.

TRENTON, March 21.—A bill introduced in the New Jersey legislature to-day makes it a criminal offense for any chauffeur to operate an automobile in the state in the absence of or without the consent of the owner of such machine. The bill is introduced as an amendment to the Crimes act, and is entirely independent of other automobile legislation now before the assembly.

Mr. Hunt, of Salem county, introduced House Bill 346, which fixes toll for automobiles and other motor vehicles on turnpikes at one cent per mile for every vehicle carrying not more than two persons, and two cents for each vehicle carrying more than two. The bill was referred to the Committee on Municipal Corporations.

PHILIPPINE TARIFF LAW.

Special Correspondence.

WASHINGTON, D. C., March 20.—President Roosevelt has approved the Philippine tariff bill enacted by Congress during the closing hours of the session, and it is known officially as the Philippine Tariff Revision Law of 1905.

The new law will become effective on May 1. Under its provisions automobiles for persons, or merchandise, are dutiable at 20 per centum ad valorem; storage batteries at 5 per centum, launches and all other water craft imported into the Philippine Islands, either set up or knocked down, 30 per centum ad valorem. The bill further provides that the expression "imported into the Philippine Islands" shall be held to mean "brought into the jurisdictional waters of the islands in or on another vessel, or towed therein by another vessel, as distinguished from coming into these waters under the craft's own motive power."

KANSAS LAW UNCHANGED.

Special Correspondence.

TOPEKA, Kan., March 18.—The adjournment of the state legislature leaves the same liberal automobile law in force. The McBride bill, which had for its purpose a number of unwelcome restrictions, died of inanition. The present speed limit in Kansas is 20 miles outside of towns. "Boss" Stubbs, speaker of the house of representatives, is a prospective automobilist, which may account for the death of the bill.

TOLEDO LICENSE BILL KILLED.

Special Correspondence.

TOLEDO, March 18.—At a meeting of the city council held this week the vehicle tax ordinance was finally acted upon, and opponents of the bill succeeded in killing it at least for a time, the measure being referred back to committee. It will now have to be redrawn and submitted for action later. This bill was drawn to take the place of the old tax ordinance which had been found faulty and, therefore, illegal, and under which automobilists were taxed $4 a year. The city is now without a vehicle tax ordinance, and automobilists are rejoicing, to say nothing of owners of bicycles, carts, and the like.

CHICAGO A. C. RACE MEET.

Special Correspondence.

CHICAGO, March 19.—Dates for the annual race meet of the Chicago Automobile Club have been fixed by the committee for May 27, 29 and 30. The sanction of the A. A. A. for these days has been asked and there will probably be no objection made. The members of the racing committee anticipate a most successful meet.

The racing will be held at the Harlem course, or at Washington Park, this matter not yet having been definitely determined.

A varied and attractive program, providing for amateurs and professionals, is being prepared, and valuable prizes will be offered.

A. C. A. CLUBHOUSE DISCUSSED.

At a meeting of the Board of Governors of the Automobile Club of America, held in the club rooms at 753 Fifth avenue, New York, on Tuesday afternoon, March 21, plans of the new clubhouse were practically perfected, a few minor changes in the original drawings being made, and in a few days they will be announced by the building committee, of which A. R. Shattuck is chairman. President Morris presided at the meeting, and other members present were: Winthrop E. Scarritt, A. R. Shattuck, Emerson Brooks, M. D. Chapman and George F. Chamberlain.

Following the meeting of the board, Alexander Churchward delivered a lecture in the evening on "The Mercury Arc Rectifier." Electrical appliances were installed for the purpose, and he gave a practical demonstration of the method of transforming an alternating current into direct current for the charging of storage batteries. Despite the very disagreeable weather, the lecture was well attended.

NOTES OF THE CLUBS.

ROCKFORD, Ill.—At the regular monthly meeting of the Rockford Automobile Club the resignation of Lloyd Scott as treasurer of the organization was accepted, and Arthur W. Robertson selected as his successor. Five new members were added to the club roster, viz.: A. E. Henry, Fred P. Neumeister, B. A. Slade, William Marshall and Jesse Dimond. After the meeting adjourned a number of members remained and formally organized the Rockford Automobile Racing Club, which has for its object the promotion of automobile races during the spring and summer. The following officers were elected for the new organization: N. F. Thompson, chairman; O. W. Johnson, secretary, and Lee Burr, treasurer.

DAYTONA, Fla.—At the recent annual meeting of the Florida East Coast Automobile Association, which was held in this city, the following officers were named by acclamation to serve during the ensuing year: E. M. Steck, president; Frank E. Bond, first vice-president; J. A. Hendricks, second vice-president; H. G. Hunnewall, acting secretary; Fred N. Conrad, treasurer, and the following board of directors: H. L. Bowden, of Boston; E. R. Thomas, of New York; J. W. Wilkinson, J. L. Robbins and J. B. Moore, of Daytona.

TORONTO.—The annual meeting of the Toronto Automobile Club has been called for May 1. The annual banquet will be held on March 31.

It is expected that a delegation from the club will wait on the Dominion Government at Ottawa to protest against the increase in duty on automobiles and accessories from 25 to 35 per cent. Automobilists are very indignant at the action of the government, which, they say, will act as a serious setback to motoring in Canada, killing the sport except among the very wealthy.

NEW YORK.—The Cutler Automobile Club composed of students of the Cutler School for boys, at 20 East Fiftieth street, has among its members eighteen owners of machines, most of them being touring cars. A series of weekly runs has been inaugurated for the spring and summer seasons, the first of which was held last Saturday to Garden City, L. I., and return. The officers of the club are: C. A. Broesel, president, and J. Milbank, secretary-treasurer.

BROOKLYN.—The first run of the season held by the Long Island Automobile Club was run last Sunday to Manhasset. Despite the fact that rain was falling, half a dozen members reported at club quarters and started on the run at ten o'clock A. M. These were joined en route by several others. Later in the day the weather cleared, and the return trip was an enjoyable one.

CHICAGO.—The Chicago Power Boat Club has announced a handicap race to be held on June 17, and a race from Chicago to Racine, Wis., and return, a distance of 130 miles, on June 24. The latter race will be for the cup offered by T. Fleming Day, of this city.

MUSKEGON, Mich.—A motorcycle club has been formed here, with the following officers: Paul Stemsen, president; Chester Howeel, secretary, and Dr. C. J. Dove, treasurer.

Leaking valves in the engine mean something more than partial loss of compression, for the exhaust valve, if not tight, permits a certain amount of burned gas to be drawn back into the cylinder, slightly weakening the charge.

The motorcycle business heretofore conducted by the E. R. Thomas Motor Company, of Buffalo, has been taken over by the recently organized Thomas Auto-Bi Company, which has established headquarters at 1443 Niagara street. The officers of the new company are: Clarence Becker, president; Edwin L. Thomas, vice-president, and W. C. Chadeayne, secretary-treasurer. Mr. Becker, president of the new company, has had charge of the motorcycle department of the E. R. Thomas Motor Company for the past four years, while Edwin L. Thomas is a son of E. R. Thomas, president of the E. R. Thomas Motor Company. Mr. Chadeayne is a new-comer in the trade. The new company made its first exhibit at the recent Buffalo automobile show, and expects to put about 1,000 auto-bis on the market this year.

E. L. Hawkins, of Philadelphia, has recently completed a tour from Philadelphia to Richmond, Va., and return, using a 40-horsepower Thomas Flyer. About 2,000 miles of roads were traveled, and two weeks were consumed in making the trip. The roads traversed were in most cases not the main highways, but back roads, and he reports them to have been in a deplorable state of repair. To many persons along the route the machine was a revelation, being the first they had ever seen. It is said that the round trip was made without having to stop the car for repairs.

The recently incorporated Hampden Automobile Company, of Springfield, Mass., will open a garage in Springfield, and also one at Westfield, about April 1. The Springfield quarters will be at 8 Willow street, and will also have an entrance at 133 State street. The company has secured the agency for the Pope-Hartford, Pope-Tribune and Pope-Waverley electric machines. The officers of the company are: Homer R. Barton, of Chicopee Falls, president; Dr. George H. Janes, of Westfield, vice-president, and Myron A. Gilman, secretary-treasurer.

The Automobile Supply Company, of Toronto, Canada, has secured the agency for Oldsmobiles, and also for the Queen, a new Canadian car. The Olds have heretofore been furnished that territory direct from the Detroit factory, but as the plant of the Packard Electric Company, at St. Catharines, Ont., has been fitted up for the manufacture of these machines, it is expected that they will be supplied from this factory within a couple of months.

William L. Swendeman, formerly of the Battle Creek Cycle Company, Battle Creek, Mich., has removed to Helena, Montana, where he has organized the State Novelty Works, with a capital of $4,000, and will conduct an automobile sales and repair station at 324-326 Fuller avenue. Mr. Swendeman now has the agency for the Rambler cars, and states that he would like to hear from automobile and supply manufacturers with regard to the sale of their lines.

The Tuthill Spring Company, of Chicago, has removed from 315 South Clinton street to 215 West Polk street, and now occupies the new building recently especially built to meet the requirements of its business. The new plant is 200 by 119 feet, with an L extension 80 by 23 feet. New and improved machinery has been installed, thus largely increasing the facilities of the factory.

The Electric Vehicle Company, of Hartford, has opened a downtown salesroom at 372 Asylum street, one block east of the Union Station. The new quarters are in charge of G. E. Risley and F. E. Dayton, of the sales department. The company's offices at the Laurel street factory have recently been remodeled and a large reception room provided for visitors.

Recent additions to Philadelphia's automobile colony are the Troga Automobile Company, corner Broad and Troga streets, which will handle the Wayne and National cars, and the Regent Automobile Station, with Frederick K. Mears, proprietor, at 4618 Regent square. The latter company has secured the West Philadelphia agency for the Autocar.

E. H. R. Green, of Dallas, Texas, member of the A. A. A. Racing Board, and holder of the present 100-mile track record, has offered a perpetual gold challenge cup for contests at that distance, the first race to be held on the Dallas track, and after that on the track selected by the winner. To each winner will be given a silver replica of the trophy.

The garage and salesrooms of the Missouri Valley Motor Company, now building at 1108-14 East Fifteenth street, Kansas City, will be ready for occupancy about June 1. The building complete will cost about $10,000. The line of cars to be handled has not yet been announced.

An automobile salesroom, repair and storage station will be opened at an early date by J. Max Meyer on West Market street, West Chester, Pa. Work has been commenced on the building, which will be two stories in height, 186 feet deep, and have a frontage of 25 feet.

Richard Ten Brock, of the Star Insurance Company of Louisville, Ky., has recently received a 30-horsepower touring car, which he purchased in Paris at a cost of $18,000 exclusive of duty. The machine is one of the handsomest in the Middle West.

Banker Brothers have secured the Pittsburg agency for the Buick cars.

The Oldsmobile Co., recently organized at Ottumwa, Ia., has secured the agency of the Olds for a large portion of the state, and the state agency for the Packard cars. J. F. Kerfoot is president, and Dr. A. C. Lee, secretary-treasurer, of the new company.

The *Kansas City World* has established an automobile column, which will appear weekly in its Sunday edition, edited by P. A. Sutermeister. This is the first of the dailies of that city to conduct a department exclusively for automobile news.

The Utica Motor Company has been organized at Utica, N. Y., Frank E. Howes, proprietor, and has opened a salesroom and garage at 128 Lafayette street. The company has secured the agency for Premier and Ford cars.

The Adams Company, of Dubuque, Ia., has opened a salesroom at 1536 Michigan Avenue, Chicago, with George E. Pickup in charge. Storage and repair facilities will be provided.

The Napier Motor Car Company, of Boston, has opened a New York branch at Broadway and Fiftieth street.

E. R. Thomas, the amateur racing auto enthusiast, has entered the motor boat sport, having recently ordered of Smith & Mabley, Inc., of New York, a boat of guaranteed high speed.

The Michigan Automobile Company, of Kalamazoo, has established a branch store at 1319-1321 East Fifteenth street, Kansas City, under the management of H. D. Clark.

J. F. Evans, formerly of Hamilton, Mass., has accepted a position as local salesman for the Ariel Motor Car Company at 70 Stanhope street, Boston.

D. D. Holmes, formerly with the Banker Brothers Company, is now connected with the Wayne Motor Car Company at 308-310 West Fifty-ninth Street.

The Columbia Automobile Company, of Washington, D. C., has occupied the garage at the rear of 118 Eighteenth Street, W., formerly the quarters of the National Automobile Co.

The Hiland Automobile Company, of Pittsburg, is now occupying its new quarters opposite the club house. The company handles the Autocar.

Jefferson Seligman, treasurer of the Automobile Club of America, is a recent purchaser of a 30-horsepower Pope-Toledo touring car.

Earl Kiser has the distinction of being the first person arrested under the wheel tax ordinance recently enacted by the city council of Dayton, O.

The Tincher Motor Car Company, of Chicago, has removed its offices from the Marquette Building to 428 Monadnock Building.

A branch of the Acme Motor Car Company, of Reading, Pa., has been opened at 1335 Arch street, Philadelphia.

Governor McLean, of New Hampshire, purchased a Franklin touring car during the recent Boston show.

RECENT INCORPORATIONS.

Long Island Observation Co., West Hampton Beach, L. I.; capital $100,000; to conduct freight and passenger service. Incorporators, Gustav H. Liedtke, George L. Robinson, George M. Auten, William H. Slattery and Henry B. Lake.

Uneedme Tool Co., Columbus, O.; capital $5,000; to manufacture tire removing tools. Officers: Joseph Schonthal, president; M. M. Phenice, vice-president and manager; Dr. C. M. Taylor, treasurer, and Dr. C. A. Howell, secretary.

South Orange Motor Car Co., South Orange, N. J.; capital $100,000; to conduct automobile and bicycle business. Incorporators, Fred Ardrey, Alick Merriman and Evelyn Merriman.

Central Automobile Co., Cleveland, O.; capital $12,000. Incorporators, T. T. Long, A. B. Wiel, W. S. Furze, R. J. Venning, A. H. Smith and W. I. Knight.

Riddell Automobile Co., Des Moines, Ia.; capital $25,000; to handle automobiles. Officers, W. J. Riddell, president; M. E. Riddell, secretary.

Lincoln Carriage and Automobile Co., New York; capital $5,000. Directors, A. Lasser, Louis Lasser and W. R. Ecker.